

# **AP Online: Analysis of a Policy Prescription for Increasing Postsecondary Access and Achievement Opportunities for Low-Income and Minority Students**

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## **Introduction**

New economic and demographic forces are currently reframing the equity and diversity goals that shaped efforts to increase access to college for low-income and minority students throughout much of the twentieth century (Duderstadt, 2000; McCabe, 2000; U.S. Department of Education [USDE], 2000a;). Filling the labor market demand of the knowledge-based economy is necessitating a significant increase in postsecondary participation and completion rates of these growing populations. Since rising postsecondary educational costs and the demise of affirmative action have made maintaining present participation rates difficult, increasing access and attainment for these underrepresented students is one of the major challenges facing higher education policymakers in the new century (Gladieux & Swail, 1999).

Policy analysts have noted that improving the ability of federal and state financial aid programs to meet the financial needs of low-income students is vital to increasing access to postsecondary education; however, even eliminating financial barriers altogether is not enough (Advisory Committee on Student Financial Assistance, 2001; Lee, 1999). Longitudinal studies of enrollment and attainment patterns indicate student aspirations and academic preparation, especially their high school curricula, are among the most “powerful” determinants of participation and persistence in higher education (Adelman, 1999; Gladieux & Swail, 1999, p. 186; USDE, 2001b). Accordingly, policymakers are moving beyond a tunnel-vision focus on financial aid and beginning to develop policy that more directly addresses the issues of unequal expectations and opportunities existing throughout the educational pipeline as a way to increase postsecondary access and attainment for low-income and minority students (Bruner, 2000).

Among the new policy initiatives aimed at improving the academic preparation of these students are the highly touted federal and state Advanced Placement (AP) incentive programs. Designed to increase participation in the generally rigorous, college-level AP high school courses and the annual College Board-sponsored AP exams, which carry college credit for high scores at approximately 2900 colleges, the initiatives provide funds for test fees (\$ 75 per test) for low-income students and incentive grants to school districts initiating projects to promote increased access to AP courses (Burdman, 2000c; College Board, 2001a; Henry, 2001).

Since 2000, state and federal initiatives have broadened their focus to include funding for programs that promote the use of distance learning technologies to deliver AP courses to high schools in rural and low-income areas that currently offer no or limited AP opportunities (Burdman, 2000a; USDE, 2000b, 2001a). In fact, Congress increased appropriations for the Advanced Placement Incentive Program (APIP) from \$ 15 million to \$ 22 million for FY 2001, adding wording to the legislation about the use of technology to enhance access to AP courses

(USDE, 2001a); and for FY 2002, grants from the \$ 22 million appropriated to the APIP were specifically authorized by the Access to High Standards Act for state educational agencies (SEAs) to provide funds for AP online programs for local educational agencies (LEAs) that serve high concentrations of low-income students, that serve rural areas, and that would not have access to online advanced placement courses without grant assistance (U.S. Congress, 2001).

AP online policy initiatives are obviously very new, and data with which to evaluate them as a policy prescription for increasing postsecondary access, persistence, and attainment among the targeted populations is minimal. Thus far, researchers have focused on characteristics and performance of face-to-face advanced placement classes (e.g., California State University [CSU] Institute for Education Reform, 2001; National Research Council, 2002); test participation rates by race/ethnicity and gender (e.g., USDE, 1999); how well students who receive credit by way of AP exams do in specific college courses and on other tests of achievement (e.g., “AP students,” 2001; Breland & Oltman, 2001; Morgan & Ramist, 1998; TIMSS International Study Center, 2001); the impact of state and federal aid for exams on patterns of AP participation (e.g., Caliber Associates, 1998); and program-specific accomplishments in increasing AP enrollment via distance learning technologies (e.g., University of California College Prep Initiative [UCCP], 2001a, 2001b, 2001c; WestEd, 2001). Despite the significant investment of public funds in promoting AP online proliferation, little research has been done to document the effect of the AP program itself on college student achievement and retention (Advanced Statistics, 2000; College Entrance Examination Board [CEEB], 2001), and no systematic investigation has focused on the potential for state and federal initiatives to achieve the desired outcomes for low-income and minority students (CSU Institute for Education Reform, 2001).

As a first step toward systematic formative evaluation of these initiatives, this study investigates the three largest state-funded online programs that have been operating for over two years: the University of California College Prep (UCCP) Initiative, the Florida Virtual School (FVS), and the Michigan Virtual High School (MVHS). The investigation will focus on the following questions: 1) What are the goals of the programs and what processes and procedures are in place to make sure they are being addressed? 2) How are the online AP courses constructed and delivered, and how does course content compare to classroom-based AP courses? 3) What does the available data on student enrollment, AP course completion, test participation, and test scores indicate about the ability of AP online programs to expand access to AP courses and enhance students’ academic capacity? and 4) What concerns have emerged and how are the programs addressing them? To determine what kind of assessment and evaluation of AP online initiatives can be made thus far and how program evaluation should proceed, results of the investigation of the UCCP Initiative, FVS, and MVHS will be analyzed in light of recent research on best practices in distance education and policy goals.

## **Research Methods**

In order to conduct a detailed investigation of the status and potential efficacy of AP online initiatives, both qualitative and quantitative data were collected from multiple sources. First, the researcher became well acquainted with the College Board’s AP program by examining College Board, Educational Testing Service, and U.S. Department of Education reports on the program itself and its growth in the past decade. Then, statistical reports and studies focusing on the

distribution and effectiveness of AP courses and best practices in distance education were consulted. Next, specific states were targeted because of their early involvement in AP online programs, reports describing those programs were examined, and data on AP enrollment and test participation in those states were analyzed. Finally, online course demonstrations were accessed and examined and course outlines were compared with College Board AP course descriptions.

After University of Michigan Institutional Review Board approval was granted, an Advanced Placement courseware provider, two AP online program administrators, and four AP online coordinators at schools were consulted. For verification purposes, the confidential data obtained from these sources was triangulated with textual data from interviews of teachers and students in newspaper reports and program status reports.

## **Description of State-funded AP Online Programs**

At the state level, California, Michigan, Washington, Florida, and South Dakota currently have operational AP online programs. Other states, such as Tennessee, Georgia, and South Carolina, are taking advantage of Federal Advanced Placement Incentive Program grants and developing one to serve the tri-state area (Morehead, 2001). The programs included in this study were chosen because they have all been operating for longer than two years, and they illustrate alternatives in policy implementation and operational models. For each program, purpose, school/student participation eligibility criteria, course design and delivery, student enrollment and attrition, and areas of concern will be examined.

### ***The University of California College Prep Initiative***

In California, expanding access to AP opportunities is especially important. The state's prestigious University of California system awards bonus points for AP course grades when computing a student's high school grade point average (GPA) for admission purposes; about 10% of the state's high school students, primarily low-income and minority, attend schools that offer only one or no AP courses (Locke, 2001); and Proposition 209 (passed in 1995) prohibits any affirmative action in admissions that could possibly compensate for the lack of AP course grades in a minority student's GPA.

The UC College Prep (UCCP) Initiative was originally founded by the University of California in 1998 to help address this inequity. In 1999, following the filing of an ACLU class-action civil rights suit claiming that California "systematically marginalizes" students by not providing equal AP opportunities (American Civil Liberties Union, 1999), the state appropriated \$ 4 million dollars for UCCP to fund the online delivery of AP and other college prep courses to eligible schools free of charge to both the schools and the students (Burdman, 2000a; University of California College Prep Initiative [UCCP], 2000a; WestEd, 2001). The following year, Senate Bill 1689 established the AP Challenge Grant Program, allocating \$ 8 million directly to UCCP and \$16.5 million for grants of \$75,000 to schools for developing, expanding, or improving their AP programs (Burdman, 2000b; UCCP, 2000a).

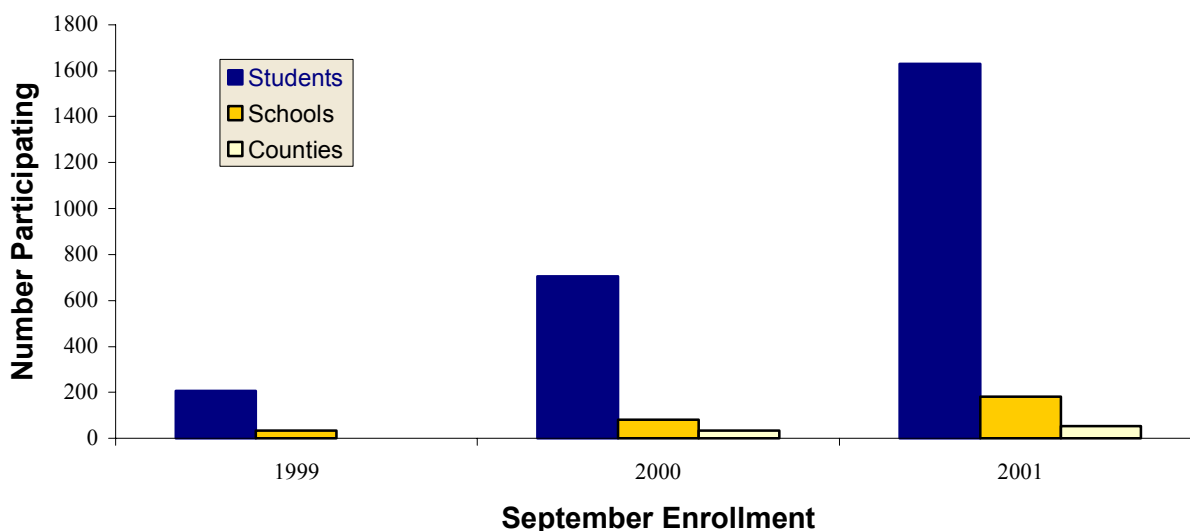
To achieve the goal of expanding access to AP courses for student populations that are underrepresented in the AP program, UCCP has established eligibility, funding, implementation,

and student participation guidelines. To qualify for the program, schools must meet one of four criteria: have four or fewer AP courses; have no math or science AP courses; have low college participation rates; and/or have more than 50% of the student body receiving free/reduced lunch. If a school meets any one of those criteria, UCCP will cover the cost of courseware fees, textbooks, and course materials; it will not, however, provide computer hardware and Internet connections, nor will it deliver courses that a school already offers (UCCP, 2000b). To participate in the program, schools must also identify “coaches” who will supervise and support students enrolled in online courses and ensure that students have “exclusive and consistent access” to a computer with Internet access for at least the equivalent of one class period per day. When the course is complete, they must grant course credit and grades and submit them to UCCP. Finally, if requested, they must participate in UCCP project assessment and evaluation (UCCP, 2002). The online AP students must have completed all prerequisite courses as determined by their high school counselor, have an email address, and be willing and able to read and answer mail every other day at a minimum. Additionally, they are expected to complete the UCCP course even if it extends after the AP examination is administered in May, take the AP exam, and participate in UCCP project assessment and evaluation activities (UCCP, 2000d).

According to the latest status report, UCCP offers eleven different AP courses (UCCP, 2002a), ten of which were developed by teams of subject matter and instructional design experts at Apex Learning, a prominent courseware developer, and one which was developed by a team of UC faculty and Cisco Systems engineers (UCCP, 2001b). The 2002-03 Online Course Catalog lists ten 2-semester courses and four 1-semester courses (UCCP, 2002b). All of the Apex courses are based on College Board course guidelines and structured much like traditional classroom-based AP courses (“Apex Learning, wins,” 1999); however, they also include multimedia enhancements, intentional community-building activities, and round-the-clock availability. Like AP students in a traditional classroom, online AP students utilizing UCCP-delivered courseware do not work alone on their own schedule. They must complete traditional, rigorous AP readings and assignments (150 hours of coursework) during structured 18-week semesters; and they must actively participate in structured discussions with their classmates (up to 25 from anywhere in the world) via online asynchronous forums. Students have access to self-paced multimedia tutorials (available to work on online and to download in PDF format), simulations, “lounge” areas for chatting informally with other AP online students, and weekly progress reports (Apex Learning, 2001b; “Apex Learning wins,” 1999; Trotter, 2000).

Instruction is handled in two different ways, depending on teacher availability and a school’s preference. The most common method is for cyber teachers, who are experienced AP classroom teachers and/or have a Master’s or Ph.D. in the subject and teaching experience, to work in conjunction with classroom coaches (Apex Learning, 2001b). The cyber teachers supplement online lessons with discussion questions, give individualized feedback on assignments, answer students’ questions, and provide ongoing assessment and weekly progress reports (Apex Learning, 2001a; “Apex Learning wins,” 1999). Onsite coaches, who are generally not subject matter experts, provide general learning support for the students. They learn the courseware system, keep tabs on students’ progress, and provide “human contact” for them (Lorenzo, 2001). The other instructional model utilizes both a courseware package and a classroom teacher who has some expertise in the subject area. The course is presented in an online learning environment, but facilitated by a face-to-face teacher rather than a cyber teacher (UCCP, 2001c).

Since it began offering online AP courses to “no AP” and “UC Outreach schools” in 1999, the UCCP program has experienced significant growth in number of students enrolled, number of schools participating, and number of counties involved. As Figure 1 shows, fall enrollment increased significantly between 1999 and 2001 (i.e., by almost 250% between 1999 and 2000 and by 93% between 2000 and 2001). In fact, in fall, 2001, approximately 1359 students were enrolled in online AP courses with cyber teachers and another 361 were enrolled in courses taught by a local teacher using online courseware (UCCP, 2001c). The number of schools participating also increased from 33 in 1999 – 2000 to 183 in 2001 – 2002, and the number of California counties involved increased from 34 in 2000 - 2001 to 53 in 2001 – 2002.



**Figure 1. Participation in the UCCP AP Online Program, 1999 – 2001**

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Data from Burdman (2000a) and UCCP (2000d, 2001a, 2001b, 2001c, 2002a).

Data collected on AP course selection and enrollments at UCCP-affiliated schools with predominately low-income and minority students suggest that the program has been successful in achieving its purpose of reaching low-income, minority, and rural students who previously did not have access to many AP courses. For example, McAteer High School in San Francisco, a school serving diverse minority populations, previously offered no AP courses, but now offers five different courses; Manual Arts Senior High School in Los Angeles, serving a population that is 79.1% Hispanic or Latino and 20.5% African-American, with a 79.2% rate of eligibility for free and reduced price meals, now offers eleven different AP courses; Farmersville High School in Farmersville, California, which serves a population that is 85.3% Hispanic or Latino and 13.7% White with an 85.0% rate of eligibility for free and reduced price meals, now offers four AP courses; Calexico High School in Calexico, California, which is 96.5% Hispanic or Latino and 78.0% eligible for free or reduced price meals, now offers thirteen AP classes in eight different subjects (data from the California Department of Education, 2001b). According to a news report, last year, Mojave High School in Kern County (approximately 100 miles north of

Los Angeles), offered eight online AP courses to its student body, which is 54% white, 24% Latino, and 12% Native Americans and others (Mills, 2002).

Despite its successful growth and outreach efforts, UCCPs program is not without problems. Student attrition is a major concern. Enrollment in all UCCP courses dropped by 22.3% throughout 1999-00 and 12.5% throughout 2000-01. To address this issue, UCCP conducted two annual Summer Institutes for teachers, training them in Advanced Placement subject areas and in the use of the Internet and educational technology; hosted a forum on online delivery of AP courses in collaboration with the College Board; initiated an online tutoring program for its AP students; and developed an orientation program for students, parents, and school personnel focusing on how to mentor program participants and how to utilize online tools and resources (UCCP, 2001b). However, the average inter-semester retention rate for AP online courses in 2001-02 was only 65% (UCCP, 2002a).

### ***Florida Virtual School***

The Florida Virtual School (FLVS) was initiated in 1996 with a \$200,000 Break the Mold school grant from the state to Orange and Alachua Counties to help them jointly create a high school curriculum online (Center for the Study of Teaching and Learning, 2000). Since then the non-diploma granting virtual school has received increased state appropriations (\$4.3 million for 1999-2000 and \$6.1 million for 2000-2001), enabling it to offer Florida high school students alternative learning options through an expanded “repertoire of public education” (Danitz, 1999), including AP courses. Its motto, “Any time, any place, any path, any pace,” and mission, “to take full advantage of current instructional technology . . .to provide comprehensive educational programs which will enable students to be productive, lifelong learners” (Florida Virtual School [FLVS], 2001a) suggest its inclusive, learner-centered approach to education.

Unlike UCCP, the FLVS is not geared entirely toward college preparatory courses, nor does it claim to be striving for increasing access to Advanced Placement courses for students with no or limited access to them, even though 31 out of the state’s 67 school districts have been identified as being AP-deficient (Lorenzo, 2001). Instead, FLVS provides 64 different courses, eleven of which are AP (FLVS, 2002), free of charge to any Florida high school student who has permission from his/her parent or guardian, high school counselor, and principal and who signs up for the program at his/her public school (Danitz, 1999; FLVS, 2001d; Miller, 2001). Students might, for instance, have scheduling conflicts at their high school, work or have other responsibilities that conflict with their school schedules, need to make up credits in order to graduate, need or want a different learning environment, want to accelerate their high school program, want to supplement their home-schooling, be traveling, and/or want to take a course that is not being provided by their school (FLVS, 2001a). Although some outreach activities, such as workshops for parents and students in rural areas, are occurring (Lorenzo, 2001), and school districts are required to provide computers for “needy students” (Danitz, 1999), the school does little else to target those students.

Also, unlike UCCP, the Florida Virtual School designs and delivers all of its own courses. A team of two or three online course developers and teachers develop the initial concept for a course, which is then “chunked” into modules. These online instructional modules are

supplemented with asynchronous discussions, synchronous chat possibilities, CD-ROMs, textbooks, and other reading materials (all supplied free to students) (Lorenzo, 2001). Each course is reviewed both internally and externally for functionality, design, adherence to state educational standards, incorporation of Gagne’s Events of Instruction, inclusion of activities at all levels of Bloom’s taxonomy, and sufficient learner-teacher and learner-learner interaction (Center for the Study of Teaching and Learning, 2000; FLVS, 2001b). Advanced Placement courses are aligned specifically with College Board guidelines, as evidenced by a comparison of the Board’s published course descriptions (available as booklets from the College Board and online in pdf format) with FLVSs course syllabi (available online) and taught by full-time FLVS teachers who have experience teaching AP courses in traditional classrooms (Lorenzo, 2001). All new FLVS online teachers participate in training programs, which include instruction in both pedagogy and the use of technology, and a mentoring process in which they work with a seasoned online teacher during their first few months of online teaching (FLVS, 2001b).

The AP courses are designed for students to work alone at their own chosen pace (traditional, accelerated, or extended) without help from onsite coaches, but students are not left entirely alone to navigate through a course at their own will. FLVS requires participation in structured asynchronous discussions, regularly scheduled submission of assignments, and “continuous communication” between teachers and students (FLVS, 2001c). According to an FLVS curriculum specialist and AP English Content developer, personal communications are “a critical factor in student success” (as cited in Lorenzo, 2001), so students are required to maintain weekly contact with their FLVS teacher and are encouraged to call and/or page their teacher with questions. Teachers are also required to call students at least twice a month (Center for the Study of Teaching and Learning, 2000); maintain a 24-hour turnaround time in response to student questions; and contact students and parents by phone and then by mail if students do not submit assignments within seven days of when they are due (FLVS, 2001c).

Like the University of California state-funded program, the Florida Virtual School has experienced significant growth in the past few years, as shown in Table 1. In the 1999-2000 school year, after two years of course development, the virtual school offered four different AP courses, and 45 students took the College Board-sponsored AP exams. The next year, FLVS offered six AP courses, 137 students took the exams, and 70.07% received “qualifying” scores of 3 or better (FLVS, 2001e).

**Table 1**  
*Participation in Florida Virtual School Courses and AP Exams, 1999-2001*

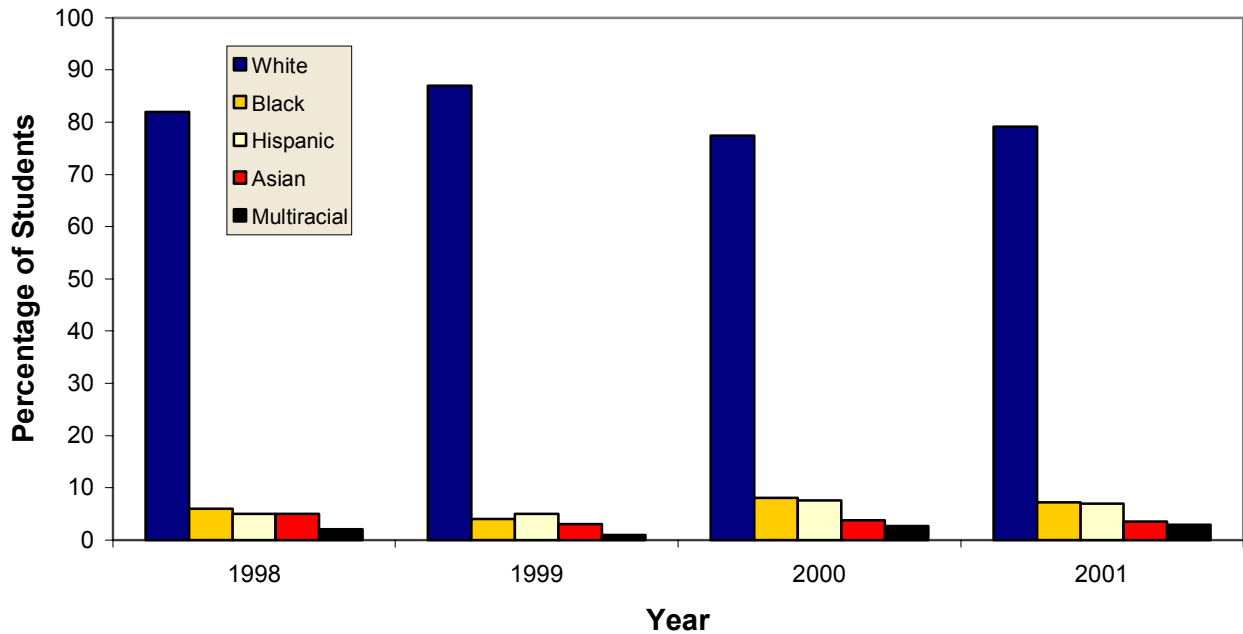
<b>Year</b>	<b>Total Students</b>	<b>School Districts</b>	<b>AP Courses</b>	<b>AP Exams</b>
1999-2000	2796	56	4	45
2000-2001	5900	65	6	137
2001-2002	8200 (approx.)	(not reported)	10	(not reported).

Note: Data are from the Center for the Study of Teaching and Learning (2000) and FLVS (2001e).

While the school touts its growth and 70.07% qualifying rate on AP exams, noting that it is 8.77 percentage points above the national rate (FLVS, 2001e), like the UCCP program, it is not without problems. Students register for courses but then never become active students; many drop during the 28-day grace period automatically granted to registrants as a trial adjustment period to the online environment; and still others fail to complete courses after remaining enrolled past the grace period. In 1999-00, for example, of the 118 students who registered for AP courses, 56 (47.5%) completed them, 15 (12.7%) dropped from the courses after the grace period had ended, and 47 (39.8%) withdrew during the grace period (author's calculations based on data from Center for the Study of Teaching and Learning, 2000). Moreover, of the 56 students who completed AP courses, only 45 took AP exams. Since 1999-00, improved communication between teachers and students, the development of an online progress report system, and better counseling at schools have helped maintain a completion rate of approximately 75% overall in FLVS courses (FLVS, 2001e). However, school personnel still report that students register and withdraw or are dropped because they have misconceptions about how much time and discipline a course will require. One student, who is presently taking English and health from the Florida Virtual School, notes that it is "really hard" because it requires "a lot of reading that in a regular classroom would be given through lectures" (as cited in Miller, 2001).

Another area of concern for the Florida Virtual School is equity. A program evaluation conducted during the 1999-2000 year found that although school districts "encourage any and all students to enroll" in the online courses, 80% of them did not have any strategies specific to increase minority enrollment (Center for the Study of Teaching and Learning, 2000, p. 139). Beginning in 2000, FLVS instituted a process whereby students from the state's low-performing schools (generally high-minority, low-income) can register for courses two weeks earlier than other students so that they have first choice of courses and get into classes that fill quickly, but still no "comprehensive strategy" is in place to serve these students (Center for the Study of Teaching and Learning, 2000, pp. 142-43).

Data on the racial/ethnic composition of AP courses alone are not available, but data for the entire FLVS program presented in Figure 2 show that participation rates for African-Americans and Hispanics did increase between 1999-2000 and 2000-2001 but decreased in 2001-02, while the rate for Whites varied between a high of 87% in 1999-00 and a low of 77.44% in 2000-01. Given that the overall high school student population in Florida is approximately 24% African-American, 18% Hispanic, and 54% White, white students are significantly over-represented and African-American and Hispanic students under-represented in FLVS courses (author's calculations based on data from Florida Department of Education, 2001). FLVS administrators report that lack of access to technology in the home is a major factor in the low participation rates for low-income and minority students. Even though many schools have labs, and every school district with students enrolled in FLVS is required to provide computers for needy students, teachers and students report that those without home access are at a definite disadvantage (Center for the Study of Teaching and Learning, 2000; Danitz, 1999).



**Figure 2. Racial and Ethnic Composition of FLVS Students, 1998 – 2001**

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Data from the Center for the Study of Teaching and Learning (2000) and FLVS (2001).

### ***Michigan Virtual High School***

Michigan began offering online AP courses in 1999 through the Michigan Virtual University (MVU), a private, not-for-profit corporation established in 1998 by Governor John Engler to deliver professional development and training courses to Michigan’s workforce via electronic technologies. The virtual university partnered with Apex Learning, offered four AP courses, 100 one-semester scholarships to high schools to cover course expenses, and free training for potential onsite student mentors (Michigan Virtual High School [MVHS], 1999). The Michigan Virtual High School (MVHS), founded in July 2000 by a legislative act that provided \$15 million in fiscal year 2001 and \$1.5 million for each of the following three years for development and operations (Michigan Government News, 2000), took over the AP online function, expanded the curriculum to include non-AP courses, such as foreign languages and English courses, and now operates as a division of the Michigan Virtual University.

The Michigan Virtual High School model combines facets of the Florida Virtual School (FLVS) and the University of California College Prep (UCCP) Initiative, but is more decentralized than either. Like FLVS, MVHS was designed to serve the needs of all kinds of students, including those who need to make up courses in order to graduate, students who have scheduling conflicts, students who want to take courses not offered at their local school, and students who have specialized interests (MVHS, 2001e). As in the UCCP model, schools, not individual students, register to offer MVHS courses, enroll students, handle withdrawals according to established policy, and determine course credit and students’ final course grades based on scores computed and reported by the online instructors (MVHS, 2000a; MVHS, 2001d; MVHS, 2001a). In

contrast to the UCCP and FLVS models, however, in Michigan, each school district determines how online course costs will be paid and how course scheduling will be handled for students. MVHS scholarships presently pay for online AP courses, but districts must pay MVHS for other courses, use a “barter” system that allows up to 20 students to enroll for free if a teacher and onsite coordinator are provided by the school, or charge the student tuition (MVHS, 2001d). Local school districts also determine if students will be given access to a computer at a scheduled time during normal school hours to do their online coursework (MVHS, 2001e).

The MVHS Advanced Placement Academy, based on the earlier (1999-2000) MVU program, offers AP courses, online packages of supplemental materials for AP classroom teachers, and AP Exam Review courses. The AP subject courses and AP Exam Review courses are provided by Apex Learning and designed by Apex courseware specialists alone, Apex designers in conjunction with Michigan State University (MSU) faculty, or MSU faculty alone (MVHS, 2000a). Although AP courses taken through MVHS do not have to be taken during a student’s regularly scheduled school day (each registered school decides how courses will be scheduled), students still must be assigned an onsite “mentor teacher” to monitor their progress, to help them stay focused on assignments and course completion, to proctor tests, and to review any final exam or project that indicates students’ level of success in a course (Michigan Department of Education, 2001; MVHS, 2001a; MVHS, 2001b). Also, the course and the mentor teacher’s name appear on the student’s class schedule even if the course is not taken during the regularly scheduled school day (MVHS, 2001d).

The courses themselves are designed for students to work on independently. Like the UCCP courses provided by Apex, they include 150 hours of multimedia instruction (tutorials, simulations, and asynchronous discussions), an online teacher who answers questions and grades assignments, and weekly assessment and reporting. Like UCCP and FVS, MVHS does not provide specific criteria for admitting students to online AP courses, allowing school administrators to determine student participation guidelines, approve individual students for participation, coordinate the scheduling process, and document credit acceptance (Michigan Department of Education, 2001). MVHS does, however, suggest that AP students “exhibit a high level of discipline and drive” as well as “superior writing skills” and well developed computer and Internet skills (MVHS, 2001a, 2001d). MVHS further notes that to be successful, online students must “stay on task and maintain a regular schedule of logging on and keeping up with the readings, course assignments, homework and other expectations” (MVHS, 2001e, p. 5); and the Michigan Department of Education (MDE) stipulates that two online courses are the maximum allowed per student per semester (Michigan Department of Education, 2001).

As in the Florida and California programs, enrollment in online Advanced Placement courses has increased steadily at MVHS. In 1999-2000, Michigan Virtual University offered only four AP courses to approximately 100 students. During its first year of operation (2000-2001), MVHS provided 12 AP courses to slightly more than 400 students; and for 2001-02, it enrolled approximately 450 students from 250 schools in 13 courses (MVHS, 2001e).

Although MVHS has no specific equity goals, the legislature has tried to increase access to AP courses for all students by appropriating funds for one-semester MVHS scholarships to school districts that do not currently teach AP courses onsite in a subject a student requests. During

1999-2000, 100 scholarships were offered (MVHS, 1999); in 2000-01, 1100 one-semester scholarships were funded (MVHS, 2000); and 2001-02, the state funded 2000 scholarships (MVHS, 2001c). The overall attrition rate is unknown, since individual districts maintain records, not MVHS; however, school coordinators report that careful screening at the school level and increasing awareness about the qualities that characterize a successful AP online student have helped decrease the number of withdrawals thus far this year.

## **Analysis of Policy Issues**

As an initial step toward AP online policy evaluation, findings on the three programs investigated for this study were analyzed in relation to three policy issues: quality of course content and delivery, access and equity, and educational efficacy. Each of these issues will be discussed in the following sections of the report.

### ***Quality of Course Content and Delivery***

Online AP courses provided by Apex Learning (to UCCP and MVHS) and by Florida Virtual School are aligned with the College Board Advanced Placement Program's standards. They are developed by high school and college educators who are content specialists, and they "reflect college-level expectations," as recommended by the 2001 Commission on the Future of the Advanced Placement Program (CEEB, 2001, p. 4). A comparison between outlines for online AP courses and the College Board Advanced Placement Program's course descriptions also indicates that course content is based on College Board guidelines. For the English literature and composition course, for example, the same textbooks are used for the study and practice of writing techniques, and literary works have been chosen from the list of AP English Development Committee-recommended texts. Discussion and writing assignments also appear to be geared toward preparing students to be able to answer the types of questions developed by teams of Advanced Placement test developers for the AP examination in the subject and included in the College Board AP course description booklet for each course. While emphasizing content coverage and exam preparation can impede deep conceptual understanding (National Research Council, 2002), instructional practices in online courses appear consistent with standard AP pedagogy.

A review of instructional practices, courseware design, and school implementation procedures also suggests that online AP courses are, for the most part, aligned with good practices in Internet-based distance education. First, courses are developed and taught by qualified, experienced teachers, an important factor in AP student success according to studies of regular AP classes (CSU Institute for Education Reform, 2001; CEEB, 2001). Second, teachers receive training and mentoring in online pedagogy, a practice recommended by the Institute for Higher Education Policy (2000) and experienced online teachers (Palloff & Pratt, 2001); and third, they maintain regular, frequent contact with students through a variety of media and provide timely feedback on assignments and questions, practices recommended by professional organizations and researchers (American Federation of Teachers [AFT] Higher Education Program and Policy Council, 2000; Chickering & Ehrmann, 2001; Institute for Higher Education Policy [IHEP], 2000).

Courseware is also designed according to established good practices in online education. As researchers and practitioners of effective Internet-based education suggest, clear explanations of course objectives, expectations, and navigational procedures are provided to students (AFT, 2000; IHEP, 2000; Kirby, 1998; Palloff & Pratt, 2001). Published guides to the UCCP, MVHS, and FLVS programs and curricula, as well as to each course, clearly explain course purposes and objectives, student and teacher roles and responsibilities, prerequisite skills for students, required materials, and available support services. Content is delivered in a variety of ways (textually, graphically, and kinesthetically), as recommended to encourage learner engagement and understanding (Van Dusen, 1997); asynchronous discussion is used, as suggested by experts and practitioners, to encourage critical thinking, peer communication, collaborative learning, reciprocity, and a sense of community (AFT, 2000; Chickering & Ehrmann, 2001; Palloff & Pratt, 2001); and small class size is maintained to encourage a high degree of interactivity.

Finally, implementation methods, including onsite mentor preparation, parental involvement, and student selection, although not entirely aligned with best practices, are improving as the programs mature. For example, research suggests that onsite mentors “play a pivotal role” in students’ success in online courses (Kirby, 2001), but school coordinators indicate they were not adequately prepared for the necessary labor and time investment in monitoring student participation and engagement and providing encouragement. According to an assistant principal at a UCCP-affiliated high school, “[t]he students really need close supervision” (as cited in Carr, 2000). Since lack of adequate mentoring can affect student achievement, both UCCP and MVHS now provide training for onsite mentors (FLVS relies on teacher-student interaction and does not require schools to provide onsite mentors.). Parental involvement, another significant factor in AP student success (CSU Institute for Education Reform, 2001; USDE, 2000a), is also now being addressed by UCCP and FLVS through special orientations and workshops (MVHS relies on local schools to work with parents.). Concerns over student participation criteria at schools are also being addressed at orientation sessions (UCCP), in published guidelines (MVHS), and in meetings with Regional Coordinators (UCCP) covering the affective, academic, and technology preparation requisite to success in online courses. Still, however, school coordinators report that assessing academic preparation is a problem, since it depends on the quality of a student’s prerequisite courses, and assessing students’ preparation for learning in the online environment is difficult, since reliable methods have not been developed.

### ***Access and Equity***

The College Board has promoted AP as a “gate-opener” that provides “opportunities for low-income students to pursue rigorous coursework and to achieve at high levels” (Lee Jones Executive Director of the College Board’s AP Program, personal communication, 2001); and policymakers have viewed online delivery as an economic, efficient means to increase access to courses for students at schools without the resources to do so. Assessing the ability of online AP programs to increase access and equity of course distribution is, therefore, important for future program and policy development.

Data from the programs investigated, the College Board, and the states involved indicate that AP online programs are in fact increasing access to AP courses for low-income and minority students, but the slight increase is not having an impact on the AP participation gap. College

Board data on AP examination participation rates in California, Florida, and Michigan, shown in Table 2, suggest the minimal increase occurring in access to AP courses for African-American and Hispanic students. Using 1999 as the base year, since technically, the three programs studied began AP online operations in 1999-2000, allowing students to participate in AP examinations for the first time in 2000, we find that participation rates have increased for all groups except Asian/Asian-Americans in California, but that Asian/Asian-Americans in Florida were the only minority group to experience an increase greater than that of Whites (3.1 percentage points as compared to 2.9 for Whites in Michigan and 2.4 for Whites in Florida). The rate of increase for Hispanics in California (2.0 percentage points) surpassed that for Whites in the state (1.3 percentage points), but total percentage is still significantly below proportionality, since 43.2% of California's high school students are Hispanic and only 35.9% are White (author's calculations from California Department of Education, 2001b). Finally, African-American participation has increased very slightly: .3 percentage points in California, .4 in Michigan, and .6 in Florida, leaving total participation rates far below proportionality in those states.

**Table 2**  
*Advanced Placement Examination Participation Rates by Race/Ethnicity, 1999 – 2001*

<b>Year</b>	<b>Total number of exams taken</b>	<b>Number taken by non-Hispanic Whites</b>	<b>Number taken by Asian and Asian-Americans</b>	<b>Number taken by African-Americans</b>	<b>Number taken by Hispanics (all nationalities)</b>
<u>California</u>					
1999	203,523 (100%)	78,485 (38.6%)	57,319 (28.2%)	4874 (2.4%)	36,232 (17.8%)
2000	229,310 (100%)	91,861 (40.1%)	66,489 (28.9%)	6032 (2.6%)	43,969 (19.1%)
2001	259,901 (100%)	103,664 (39.9%)	72,971 (28%)	6936 (2.7%)	51,598 (19.8%)
<u>Florida</u>					
1999	70,344 (100%)	41,583 (59.1%)	3350 (4.8%)	4369 (6.2%)	12,331 (17.5%)
2000	78,222 (100%)	48,769 (62.3%)	6038 (7.7%)	5100 (6.5%)	13,836 (17.7%)
2001	88,348 (100%)	54,352 (61.5%)	6938 (7.9%)	5964 (6.8%)	16,092 (18.2%)
<u>Michigan</u>					
1999	29,685 (100%)	22,754 (76.6%)	2452 (8.3%)	856 (2.9%)	464 (1.6%)
2000	33,074 (100%)	26,454 (80%)	2868 (8.7%)	1076 (3.3%)	591 (1.8%)
2001	36,335 (100%)	28,874 (79.5%)	3231 (8.9%)	1212 (3.3%)	644 (1.8%)

Note: Author's calculations based on data from College Board, 2001b.

<sup>a</sup> Only the four dominant racial/ethnic groups are included, so number of exams taken by the four groups does not equal total number taken, and the sum of participation rates is not 100%.

AP online program administrators give two main reasons for disproportionate access and completion rates. First is the digital divide. According to an evaluation of the Florida High

School conducted by the Center for the Study of Teaching and Learning at Florida State University (2000), lack of access to technology at home has contributed to low enrollment rates among African-American and Hispanic students. Although many schools in Florida and Michigan have labs where students can access their online courses, and schools affiliated with UCCP are required to provide each online student “exclusive and consistent access” to an Internet-connected computer for the equivalent of one class period per day, students indicate that having access to an online computer at home is almost essential for studying content modules, participating in online discussion, and completing assignments (Center for the Study of Teaching and Learning, 2000).

The second reason given for disproportionate representation in their programs is lack of academic preparation. The 1999 National Assessment of Educational Progress (NAEP), for example, reported that only 17% of African American students and 24% of Hispanic students, as compared to 46% of White students, read at proficiency Level 7, the level necessary for reading college-level course content (as cited in the Center for the Study of Teaching and Learning, 2000). In short, many minority and low-income students do not qualify for admission to the online AP courses, and some who do according to their school records, drop or fail to complete their courses because they cannot keep up with the work. Corroborating this information is the fact that in a study of regular AP classroom teachers (n=286), 44% reported that their students were not adequately prepared for the AP class, and teachers in lower-SES schools were “much more likely” than teachers in higher-SES schools to report “consistent deficiencies” and “large gaps” in preparation (CSU Institute for Education Reform, 2001, p.7).

Another possible reason for disproportionate participation rates could be an unintentional gatekeeping mechanism. Without standardized procedures for notifying students about and enrolling them in online courses, teachers, school counselors, and/or school administrators can inadvertently create barriers to equal opportunity. An external evaluation of the UCCP Initiative did in fact suggest that uniform guidelines for informing, selecting, and enrolling students be developed to help minimize inequities in opportunities within and among schools (WestEd, 2001).

### ***Student Achievement***

As suggested above, providing access to AP courses does not provide an education. Similarly, course completion does not guarantee demonstrable learning. As national participation has increased, mean scores on AP examinations have decreased; and, as shown in Table 3, this trend is apparent during the past three years in California, Florida, and Michigan. In fact, mean exam scores (based on a 5-point scale) have dropped for all racial/ethnic groups in all three states except for Asian/Asian-Americans in California, for whom the participation rate did not increase, and Whites in Michigan, whose mean score did not change. Additionally, although mean scores of FLVS Advanced Placement exam participants are above the state mean (3.47 as compared to the state average of 2.86 in 2000 and 3.33 as compared to the state average of 2.79 in 2001), suggesting that virtual courses increase student achievement, participation in the program is still very low (only 45 FVS students took AP exams in 1999, and 137 took them in 2000), and the mean has also decreased as participation has increased.

**Table 3***Advanced Placement Examination Mean Scores by Race/Ethnicity, 1999 – 2001*

Year	Total	Non-Hispanic Whites	Asian and Asian-Americans	African-Americans	Hispanics (all nationalities)
<u>California</u>					
1999	3.05	3.14	2.97	2.27	3.05
2000	3.02	3.13	2.94	2.23	3.03
2001	2.94	3.06	2.90	2.17	2.90
<u>Florida</u>					
1999	2.85	2.86	2.84	2.18	2.96
2000	2.86	2.88	2.91	2.15	3.04
2001	2.79	2.82	2.82	2.10	2.88
<u>Michigan</u>					
1999	3.04	3.02	3.36	2.46	3.00
2000	3.03	3.02	3.33	2.36	3.00
2001	3.02	3.02	3.30	2.28	2.87

*Note:* Data from College Board, 2001b.

Another indicator that AP online courses might not be effectively increasing minority students' academic capacities is the fact that many Hispanic students are taking the AP Spanish language and Spanish literature courses. Although we cannot assume that the students come from Spanish-speaking homes, investigation of course offerings and enrollments at UCCP-affiliated high schools does raise questions of program efficacy. As examples, a large urban high school with 79.1% Hispanic or Latino students currently enrolls 164 students in AP Spanish language and 40 in Spanish literature, and a small rural high school with 85.3% Hispanic or Latino students enrolls 27 of its total 517 students in Spanish language (data from the California Department of Education, 2001b).

### **Discussion of Policy Goals**

With the help of federal and state funding, AP online programs are growing and spreading across the country, spawning a lucrative courseware industry (Lorenzo, 2001). Policymakers and educators alike support initiatives to deliver AP courses online, believing that they are valuable for students, schools, and the nation as a whole and that online delivery is a convenient, economical way to provide such courses to schools and individual students who would otherwise lack access to them. The research conducted for this study suggests that these beliefs and the programs' widespread popularity are based on assumptions, not assessment and evaluation of AP courses and their ability to increase academic capacity, comparative cost-benefit analyses of AP online programs in relation to other college preparatory options, or analysis of the social benefits of such programs.

First, although the College Board's Advanced Placement program has a long history and excellent reputation, there is little real evidence of its ability to increase students' academic capacities and postsecondary achievement. Since the online programs have been operating only three years, longitudinal data on students' attainment in postsecondary education are not available. However, the same holds true for data on all AP students. The College Board tracks and publishes numbers of examination participants and their scores, but data on AP courses has not been kept systematically until very recently (Burdman, 2000b). Additionally, except for Adelman's (1999) research showing that taking AP courses is more strongly correlated with bachelor's degree completion than with college access, studies on AP students' postsecondary attainment and achievement have been limited to specific courses. In its report to the College Board, the Commission on the Future of the Advanced Placement Program noted this lack of research, indicating that "[w]e need to know much more about how AP enhances the college experience" and strongly recommended that "rigorous research efforts to validate AP" be accelerated (CEEB, 2001, p. 15).

Second, states are rushing to provide AP courses online as a means of improving students' preparedness for college with little or no analyses of educational and economic benefits and alternatives to accomplish the same goals. Without hard evidence indicating that AP does in fact enhance the college experience, benefits of the AP curriculum appear to be based solely on the program's longevity, standardization, and use in admissions and placement. Research does suggest that the courses do not increase academic ability; they stress memorization of facts to "bolster" AP examination scores at the expense of creativity, critical thinking skills, and deep understanding (CSU Institute for Education Reform, 2001; National Research Council, 2002). Critics also point out that honors courses designed by regular high school teachers to teach upper-order thinking and problem-solving skills could enhance academic and career preparation more effectively than test-driven AP courses. Others question the economic efficacy of developing (or purchasing the rights to) and providing courses online instead of developing real teachers to teach honors courses, allowing qualified students to take college-level courses at local colleges and universities, or hiring college instructors to teach college-level courses at high schools (Henry, 2001), and experience does in fact suggest that online courses are not cost efficient (Twigg, 1996).

Still another area of concern is the ability of AP online programs to reach and help low-income and minority students. The data on participation, outreach efforts, attrition, and examination scores collected for this study suggest that although the programs are increasing access to AP courses, the impact of the increase is insignificant in terms of both closing the AP gap and improving academic achievement. Even at schools with high percentages of minority students, representation in traditional AP classrooms is low, and even at schools with "robust" traditional AP programs, African-Americans and Hispanics are significantly underrepresented (Burdman, 2000a, 2000b; CSU Institute for Education Reform, 2001); therefore, expecting online delivery to increase racial/ethnic proportionality seems overly optimistic. Educators, researchers, and College Board AP program administrators agree that in order to be successful in AP courses, students need strong academic preparation throughout their school years, district-wide support of a "strong AP culture," parental involvement, and a college-going culture including teachers and counselors trained to promote college aspirations (Burdman, 2000c; CEEB, 2001; USDE, 2000a).

Parachuting AP courses in via the Internet could be a formula for failure that the new efforts at orientation programs, workshops, onsite mentors, and online tutors cannot alter.

Finally, even if online programs could increase access and equity in AP and thereby improve the academic capacities of some low-income and minority students, a larger question about the social benefits still remains: is it in the public interest to support initiatives designed to provide advanced education for the brightest, most capable students when so many others are not receiving the education or have not achieved the academic level necessary for standard admission to college? Dr. Kati Haycock, director of the Education Trust, an education reform organization in Washington, D.C., points to this “disconnect,” noting that the number of college applicants needing remediation in reading, writing, and math is increasing, but AP, not high school remediation, is now the “fastest growing segment of high school curricula” (as cited in Burdman, 2000a). From this perspective, initiatives that funnel millions of dollars into programs designed to educate the most capable rather than helping those who need more help in the basics are not socially responsible; instead, they tend to exacerbate educational and economic inequities.

This potential problem and the other issues related to AP online policy goals suggest the need for research to inform future policy decisions. First, comprehensive assessment and evaluation of AP’s educational value, benefits, and uses are needed. Second, research identifying quality college preparatory programs and comparing their performance in terms of student educational achievement and cost with AP should be done. Third, a longitudinal study of the effects of state-funded online programs on access, equity, and performance as well as a comparison of achievement and attainment of online and regular AP classroom students should be conducted. Finally, a cost-benefits analysis of AP Incentive programs compared to other educational programs in terms of social benefits is needed. In short, it is only with hard evidence of the educational and social benefits of programs designed to increase access to postsecondary educational opportunities and degree attainment for low-income and minority students that we can develop effective policy to achieve educational efficacy and equity goals.

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