

MAPP (Monitoring Academic Progress Policy): Providing Advising Direction Through The Use of a Degree Auditing System

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A comprehensive policy for monitoring students' progress into appropriate majors, the Monitoring Academic Progress Policy (MAPP) charts students using a combination of degree auditing and academic policies. Results of the last three years of this program are discussed. In addition, recommendations are made for those institutions considering implementing similar systems.

An increasingly popular assumption among the leaders of higher education is that the likelihood of graduation is enhanced when students are provided with specific directions in their curricular programs. A closely related assumption is that educational institutions become more efficient when students are provided with specific directions.

A technological advance, developed at the University of Florida, uses a computerized partial degree auditing system to generate individual letters to students. The letters detail particular directions (or maps) which are intended to provide direction and to assist students to achieve academic success. Other institutions with similar concerns about retention and monitoring students' progress may be able to benefit by adapting some of these measures. Before exploring MAPP and its impact on retention and advising, several topics deserve brief review: retention, curriculum monitoring, and computerized degree auditing systems.

The study of retention is of special concern to most state institutions, primarily because of the capital lost when students drop out of college. (Hossler & Bean, 1990). Levine (1989) noted a general shift in attention, particularly for public institutions, from "access to college to a focus on graduation from college" (p. 170). In fact, Noel and Levitz (1983) predicted that more than 33% of entering college freshmen would not advance into the sophomore year. Tinto (1987) calculated that 44% of all entering students will graduate through continued enrollment at their first institution. While the exact numbers vary, many researchers agree that a significant proportion of students fail to receive a degree.

The issue of retention affects not only those students who are on probation or suspension. Recently, and in increasing numbers, students in good academic standing (above a 2.0 grade-point average [GPA]) are

finding themselves ineligible for competitive majors when they reach junior year status. Gordon and Polson (1985) referred to these students as the "New Undecided." Many of these students drop out simply because they declared majors for which they have not completed the requisite courses, or they do not have the competitive GPA to enter their desired degree programs. Hossler and Bean (1990) further suggest that some students drop out because they feel overwhelmed by the multitude of rules and regulations that govern academic progress.

Gordon and Polson (1985) similarly report that, especially at large institutions with selective and oversubscribed major programs, an increasing number of lower division students have not been able to access their declared majors. For example, at the University of Florida, approximately 30% of the 1984 freshman class with GPAs between 2.0 and 2.5 left the institution without being accepted into upper division colleges (Lee & Powers, 1992).

Among Ramirez and Evans's (1988) eight factors contributing to probation and dropout in college were "inappropriate course selection" and most significant, a "lack of comprehensive and ongoing counseling and monitoring" (p. 41). These researchers defined monitoring not only as an intervention, damage-control procedure, but as a "mandatory comprehensive advising process which identifies (students) upon entry and monitors them through graduation" (p. 41).

Furthermore, the need for periodic curriculum monitoring throughout students' freshman and sophomore years is of special importance. Students need meaningful feedback about their progress during the first two years, when dropout rates are the highest. Steele, Kennedy, and Gordon (1985) report that during this period, students undecided about their choices of majors often experience feelings of confusion and anxiety, since "they may have accumulated large numbers of academic credit hours and may never have considered alternative majors until they have been denied admission" (p. 58).

The lack of continuous monitoring and timely feedback can be problematic for above average students as well. Often students who are strong academic performers do not receive sufficient feedback about their progress toward admission into their declared majors. This philosophy is captured by the eminent psycholo-

gist, Albert Bandura, who suggested:

Without standards against which to measure their performance, people have little basis for judging how they are doing or for gauging their capabilities. Subgoal attainments provide clear markers of progress along the way to verify a growing sense of self-efficacy. (1982, p. 134)

The curriculum monitoring of college students during the early years of academic development are of critical importance. As Ramirez and Evans (1988) conclude, "the most effective solution lies in a resource which either provides comprehensive services or refers students to distinct offices and services and then helps them integrate those diverse inputs in beneficial ways" (p. 41).

Services that are tailored to each student's individual profile tend to be highly complex and cost prohibitive. To accommodate entire student populations, computer technology must be utilized, academic departments must collaborate, and extensive preliminary research and development needs to be conducted. The administrators at the University of Florida used the existing computer technology and advising infrastructure to create an effective monitoring system within a limited budget. Developed to address these issues, the Monitoring Academic Progress Policy (MAPP) was created. To understand the background behind the creation of the MAPP, reviewing similar attempts at utilizing computer technology to monitor students' progress is important. Other authors have comprehensively reviewed degree audit systems (see Kramer, Peterson, and Spencer, 1984; Friedlander 1983; Peterson and Kramer, 1984). The description of a special subset of these initiatives is discussed below.

Some institutions have attempted to address the issues of lower division retention, inadequate feedback, and admission into selective upper division majors by using the efficient monitoring capability of computers. Many of these initiatives have occurred in community colleges. Administrators at community colleges must not only be concerned about students achieving associate's degrees, they often must wrestle with student transferability to upper division programs at four-year universities.

In 1979, Miami Dade Community College implemented two programs to assure that students were informed about their academic progress. During midterm the Academic Alert (AA) system, using a computer program called the Response System with Variable Prescriptions (RSVP), generated letters based upon reports from the faculty on student progress and attendance (Anandam & DeGregorio, 1981). AA was implemented along with the Standard of Academic Progress (SOAP) which placed students

on warning, or eventual suspension, if satisfactory progress was not made at the end of each semester. In 1984 an institutional self-study indicated a number of weaknesses in the AA system including "the lack of college-wide standards for evaluating academic performance and attendance" (p. 44). The evaluation process, using terms such as "satisfactory" and "needs improvement," seemed too vague to many students who wanted their AA letters to "reflect the specific levels of their academic achievement" (p. 68). Subsequently, after another evaluation of the AA system in 1991, Miami Dade Community College terminated the AA program and has since relied on SOAP to monitor their students' academic progress (Belcher, 1991).

At Prince George's Community College in Maryland, an equally ambitious computer-assisted program was initiated in the early 1980s. Termed START (for Student Testing, Advisement, Retention, and Tracking), this program combined an academic alert system with the Comprehensive Guidance and Placement (CGP) testing policy (Prince George Community College Report, 1983). However, after a decade of operation, START has been superseded by a traditional degree audit system.

More recently, Portland Community College (PCC) developed a computerized student tracking and advising system called ADVISE (Bach, 1992). This program provides an assortment of information about test scores, employment status, financial aid status, and academic transcripts. In addition, ADVISE offers advisors access to on-line information about class closures during registration periods as well as the PCC degree audit program (called STEP). However, ADVISE does not provide personal feedback to students based on performance in specific majors.

In summary, few colleges have developed comprehensive methods of monitoring student populations that provide specific directions for registration (Pollock, 1989). Furthermore, many of the academic alert systems are currently utilized to primarily monitor subpar (below a 2.0 GPA) academic performance. Student feedback has shown that many of these systems can give only generalized advice on how students are progressing per semester, as opposed to their entire progress to date. As a result, many institutions have chosen to abandon early alert systems in favor of more traditional advising methods.

The Monitoring Academic Progress Policy (MAPP)

In 1989, Armes, predicted that the "degree audit system of the future will allow a student to check

current progress toward any degree or program of study." Essentially, the output could be much more than a simple audit. It would be able to provide academic direction based upon each student's individual progress—a goal the designers of MAPP strove to accomplish.

In 1991, a task force comprised of students, advisors, and faculty members at the University of Florida recommended university procedural changes that would increase the likelihood that students could achieve degrees in their intended majors. The task force, *Charting the Course: Advising for the Nineties*, addressed issues involving personnel support, office space for advising, and most important, policies relevant to the processing and guidance of students as they progress through their undergraduate careers.

Two primary task force recommendations were that students be provided with the opportunities to affiliate earlier with their degree-granting colleges and that these colleges set progress standards appropriate to each year of a student's enrollment. The overwhelming sense was that students needed earlier and more meaningful feedback about their progress at the university. Under the previous procedure, students often waited until 80 credit hours (the maximum allowed by the university to a lower division student) before they applied to upper division colleges. This delay in major declarations left students little time for redirection to other majors. Furthermore, insufficient information was being provided even to the student who was academically on track. MAPP addresses these concerns.

The formation of three key committees (the Central MAPP Team, the Transition Committee, and the Undergraduate Advising Council) precipitated the technical development of MAPP from a concept to a concise system of interconnected computer programs, academic policies, and student record information screens. Using existing software at the University of Florida, the Central MAPP Team designed and modified the software tools utilized by MAPP. Specifically, the SASS (Student Academic Support System) program was used for processing students' transcripts, *Mark IV* was used to build the reclassification and MAPP letter logic programs, and text was entered using the University of Florida Registrar Office's *Letter Text Generator*. Faculty representatives in each college were asked to identify specific progress requirements for each of the majors offered. These requirements were written into individual SASS programs to create partial degree audits.

As students accumulate 30, 45, and 60 earned credit hours they each receive a letter informing them if they are on track to be admitted into their preferred upper division colleges. These letters let students

know whether they have the right courses and GPA for chosen majors. In addition, the letters also identify what courses and GPA a student needs to attain by the next MAPP evaluation.

Every aspect of the admission process is evaluated. Internal college prerequisites such as "complete at least an 80th percentile on the Pharmacy College Admissions Test" are monitored. More important, admission criteria are individually evaluated. For example, a student may be told that he or she needed to "complete 45 hours of general education credit" and informed that he or she had only "earned 38 hours of general education to date." This critical information is placed in a section of the MAPP letter and utilizes encouraging phrases such as achieve, apply, maintain, and so forth. In essence, the MAPP letter provides both an audit and individual academic direction.

If a student is not making minimum progress toward the intended major, the MAPP letter directs the student to see an academic advisor to determine a course of action to either successfully complete the original major or to select another more appropriate major. For the struggling student, academic advising becomes mandatory, either at the Academic Advising Center or with a faculty member in one of the undergraduate degree-granting departments or colleges. MAPP is also capable of charting potential alternative courses of study for undecided students. In fact, advisors are able to explore any potential major and print copies of programs for which a student meets desired standards.

From a managerial perspective, MAPP enables colleges to accurately predict demand for courses. As MAPP accurately codes students into probable or desired majors, administrators in the various departments and colleges are able to more precisely offer courses when they are actually needed.

Results

Since its launch in December 1993, MAPP has provided a myriad of positive outcomes that have affected the overall distribution of lower division students at the University of Florida, transforming the academic advising system. Eight MAPP analyses have been performed since the inception of the program. To date, MAPP has produced 50,000 individual student evaluations. Approximately 10,000 lower division students are processed through the MAPP system each semester (and roughly 1,900 each summer). Four types of data are presented: the configuration of students' performances at the different benchmark time periods, retention information, redistribution of potential and actual academic majors, and the impact on advising.

Figure 1 Student Success at the 60-Hour MAPP Benchmark: December 1993–May 1996

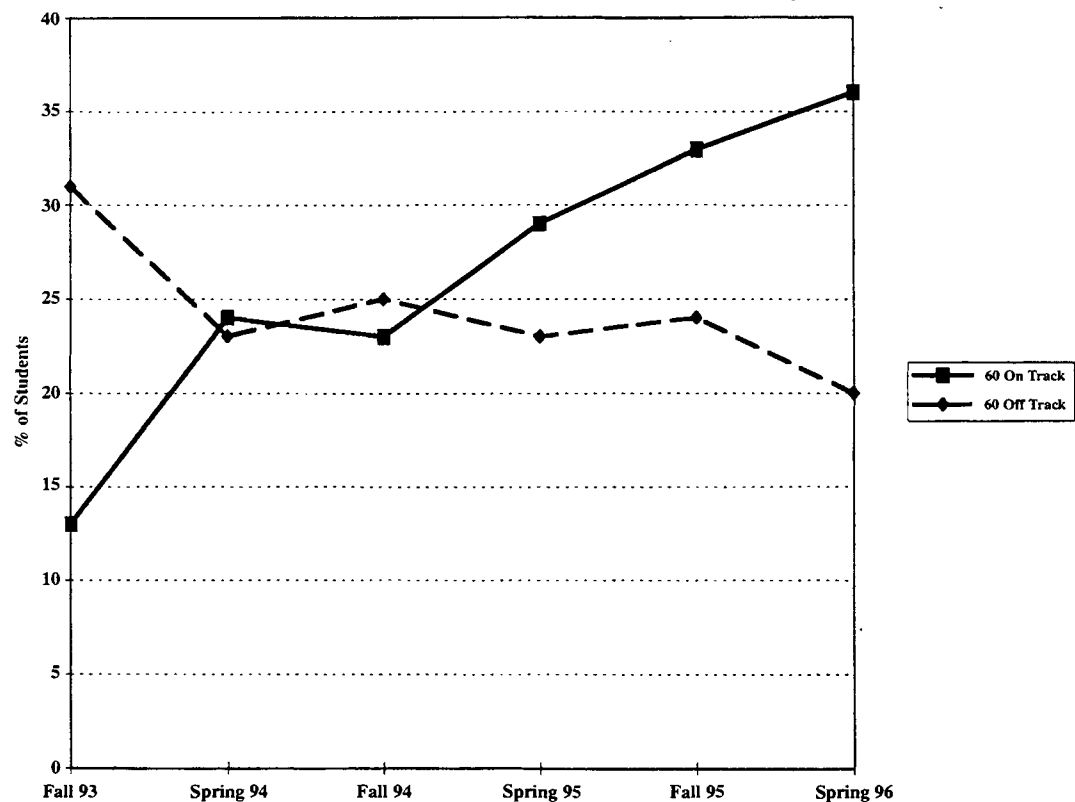
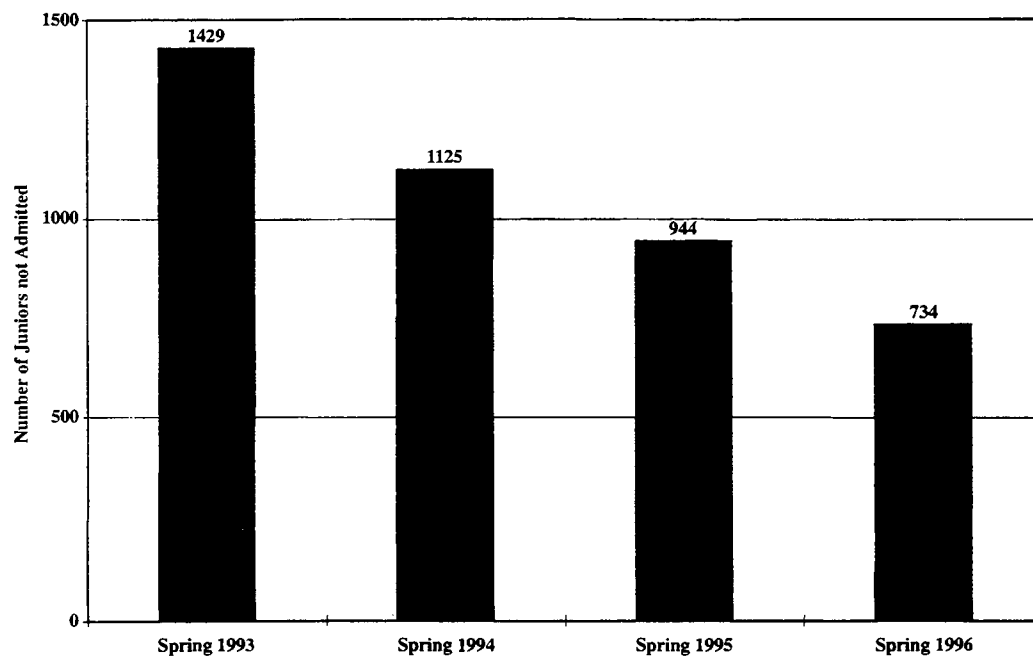


Figure 2 Students at Risk: University of Florida Juniors not Admitted to an Upper Division College, December 1993–May 1996



Student Benchmark Performance

As described above, at each benchmark of 30, 45, or 60 credit hours, students are essentially trichotomized. These subgroupings represent a) those who have met all criteria and are considered on track, b) those falling well below standards for the initial major and therefore should consider alternatives, and c) those who lack a course(s) or GPA standard, but still have a chance to complete requirements prior to the next evaluation.

The performances of students at each MAPP evaluation have been relatively consistent. Over the past eight MAPP analyses, roughly 30% of all students at each benchmark are above standards, approximately 49% are in the middle (continued) category, and nearly 21% need to reassess their intended majors. However, over the years the size of the group considered on track by MAPP is increasing, especially at the 60-hour benchmark (see Figure 1). The number of students who were considered off track and potentially inadmissible has steadily declined during that same period. This increased success at the 60-hour benchmark will impact the final graduation rates as more students are retained and admitted into upper division colleges.

Retention/Admission

The impact of MAPP is evident when one compares retention data from the years before MAPP implementation and data since the program was initiated in 1993. The most obvious retention effect is that the percentage of students formally admitted to upper division, degree-granting programs has increased 19.7% from the Spring of 1993 to the Spring of 1995, more than 4 times the university growth rate during that period. According to the University of Florida's Office of Admissions, despite a 4.5% growth in the overall number of sophomore and junior applicants during this period, the percentage of students not admitted to an upper division college by the Junior year has decreased by 35% during the same period (see Figure 2). Students now receive early information concerning omissions in their curriculum files and thus are better able to register for the appropriate prerequisite courses.

After advance registration for each term, MAPP identifies the number of students who forfeit their registration and simply walk away from campus. In fact, the number of students not preregistering, both sophomores and juniors, has been declining in a steady fashion, demonstrating that the university is retaining, rather than turning away, students at this critical transition point.

Finally, the number of students who are granted early admission (affiliated as freshmen or sopho-

mores) to upper division colleges has quadrupled. It is now easier to identify, encourage, and appropriately advise those students performing well.

Redistribution of Majors

A potential explanation for the retention success involves the redistribution of students into appropriate or realistic majors during the sophomore year. MAPP now holds students accountable for staying on track for their desired major and monitors behaviors much earlier in student undergraduate careers. Often, former students discovered too late that they would not be admitted to their desired majors, and at such an advanced stage had no time to a) correct the deficiencies or b) redirect energies for entry into alternative majors. Many of these students, even those with a 2.0 (or above) GPA, left the university.

Since the inception of MAPP, the distribution of lower division majors now closely mirrors the distribution of upper division majors. Through accurate progress monitoring and academic advising, students are discovering and being admitted to appropriate majors earlier rather than leaving the university due to failure to qualify for upper division admission at the last minute.

The redistribution of majors within the freshman and sophomore years since the inception of MAPP is evident within several departments at the University of Florida. For example, the number of lower division students declared in architecture and physical therapy, traditionally high demand majors that require many preprofessional courses and high GPAs from students, is in decline. Between September 1993 and January 1995, before MAPP and after the second year of MAPP, the number of freshmen who declared architecture declined by 30% and the number of sophomores who declared architecture also declined. Declines of 10% and 50% were noted for freshman and sophomores, respectively, declaring physical therapy majors. The drop in sophomores coded in these majors is more severe than the drop in freshmen. This is probably due to the fact that sophomores had received multiple MAPP evaluations which reinforced the actual admission requirements to these majors. Those students remaining in high demand majors by the end of their sophomore years were more realistic applicants; they possessed more of the necessary preprofessional courses and GPAs than their under-qualified peers.

Two other majors, sociology and zoology, demonstrate that students find alternative majors rather than leave the university. The number of freshmen interested sociology and zoology remained stable between September 1993 and

January 1995. However, the number of sophomores in these majors during this same period had substantially grown: a 66% increase in sociology sophomores and a 43% increase in zoology sophomores. Again this growth is attributed to the redistribution produced by the MAPP evaluations at the beginning of the sophomore year. Also, there is academic diversity in this redistribution. Sociology is a social science while zoology is more biological and caters to those students interested in premedical and other health related studies.

Impact on Advising

While some may argue that technology or automated degree audits curtail the need to visit an academic advisor, our data strongly indicate that creative advances in technology such as MAPP tend to drive the need for affiliated human resources. In fact, MAPP has elevated and enhanced the quality of interpersonal dialog between students and advisors. By stimulating higher levels of discussion which allows for identification of critical, interpersonal advising issues, the introduction of MAPP has significantly impacted the demand for advising. The number of monthly individual sessions in the Academic Advising Center alone has increased by 54.7% since MAPP implementation.

Discussion

Three issues, in addition to the presented data, should be examined in relation to MAPP's effect: a) focusing advising on the early critical years in one's undergraduate education, b) the feasibility of such a technological approach, and c) the impact of MAPP on advising.

First, an argument can be made that the MAPP initiative is successfully addressing the New Undecided student. The University of Florida is not the only academic institution finding students ill prepared to enter their desired majors by the appropriate time. The data indicate that students can be effectively forewarned about prerequisites, maintain their registrations, and retained in spite of what is often a plethora of academic regulations. Retention is primarily a freshman and sophomore year problem. This is the time when students must be redistributed and reallocated into proper majors depending upon their interests and talents. MAPP assists students in properly aligning these talents and intentions.

Further, as suggested by Bandura (1982), students must receive meaningful information about the attainment of subgoals. Too often administrators fail to listen or pay attention to beginning students' goals. The MAPP initiative not only informs stu-

dents, it also holds them accountable for their performances. Because students have a larger stake in the process, they feel more successful when they achieve their own goals.

The second issue is whether programs such as MAPP can be implemented and replicated. The technology exists, and students do benefit from meaningful individualized letters providing direction. Most degree auditing programs could be modified to simulate, if not exactly replicate MAPP software. MAPP creators employed existing software tools simply directed to required advising tasks. However, such efforts are not easy. In addition to reprogramming a multitude of the registrar's currently existing student processing routines, faculty and staff devoted a great deal of time and energy to achieve the successful MAPP programs. Progress requirements were established for each and every major. Existing rules and regulations were examined for their impact upon students and their continuous enrollments. Regulations were modified in light of MAPP. Many of the policies and regulations in the undergraduate handbook had to be rewritten. Before initiating a program like MAPP, a school must be totally dedicated to seeing it through to its successful implementation.

Third, there are several impacts of MAPP. Clearly, students have benefitted from MAPP. Many more are staying and presumably, will graduate from the university. Further, meaningful feedback leads to timely realignment with alternative majors. However, MAPP does not replace the need for quality interaction with an advisor. Instead, it creates greater demand and stimulates higher levels of discussion. MAPP is also an institutional tool. The planners at University of Florida are now much more capable of predicting curricular needs as the current cohort of students progress through the system.

Monitoring/Tracking Student Progress: An Operational Definition

The terms "monitoring" and "tracking" have been associated with computer-assisted advising for decades. To date, the operational definition of a monitoring system has been vague, inconsistent, and possibly, inaccurate.

Toward the goal of developing a more accurate definition, three features that a monitoring or tracking system should incorporate are suggested. First, the system should be able to systematically inform the entire student population (or subgroups of that population) of their individual academic progress. Second, the system should, be able to identify and warn students who are in good academic standing (above a 2.0 GPA) but are not progressing towards an appro-

prate major. Third, the system should be able to comprehensively inform students, preferably using easily understood text, about the next steps to take towards achieving success in their respective majors.

In the future many other institutions will attempt similar initiatives. And, as mentioned above, it is assumed that many degree auditing system packages will soon be modified to incorporate options similar to MAPP. Much depends, however, on a variety of factors: the initial integrity of the student record database, especially nonstandard course work and required achievements, such as auditions; the work done by faculty to establish the standards; and the quality of the text generator. Institutions are cautioned to proceed carefully in each unique situation to determine precisely required options and which options are available with the system being considered.

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