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ABSTRACT

Cohorts of entering freshmen were tracked over time to determine whether the suspension policy at Montana State University (MSU), Bozeman was having the intended effect on academic success, defined as degree completion. The university's current policy requires students to be suspended after receiving grade point averages (GPAs) of lower than 2.00 for two consecutive terms. The objective of the policy, which requires a student to sit out one term before returning to MSU, is to require the student to evaluate his or her academic difficulties, take steps to correct them, and return to MSU with a stronger commitment to scholastic achievement. The returning student continues to carry the burden of the cumulative GPA, and a "probation" designation is not removed until the student earns both term and cumulative GPAs of 2.00 or above. The study examined a population of 4,933 first-time, full-time degree-seeking freshmen, the entering cohorts of 3 years. Of this population, 17% were suspended at some time during their university attendance. The data suggest that in the 1990s, suspended students seldom graduated from MSU. The policy was found to be protectionist, isolationist, reactionary, and summative. Recommendations for suspension policy in the future are that faculty should revisit this policy through a contemporary lens, and that the "time out" intervention should be replaced by a "time out" plus intervention approach that is designed to address students' academic difficulties. It is also recommended that strategies be developed to enhance students' preparation for college, especially for calculus courses. (SLD)

Academic Success of Suspended Students

by

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Introduction

From its inception as a land grant university funded under the Second Morrill Act, Montana State College of Agriculture and Mechanic Arts demonstrated commitment and expectations for scholastic performance by its students. In the First Annual Catalog published in 1893 faculty established criteria for enrollment, attendance, examinations and conditions for academic performance. Although more general in nature these criteria implied strict adherence to the policies. Student progress was directly linked to faculty expectations and continuous review. By early 1900 the emphasis on academic success included an additional level whereby each student's progress was monitored by individual faculty members or Class Officers. It appears that suspension was more a factor of errant social behavior than lack of academic performance.

During the next five decades institutional policies pertinent to academic performance and behavior included the creation of specific criteria pertinent to credit, grades, grade points, and minimum scholastic requirements. The faculty created a Student Handbook to guide students in fulfilling their academic processes and defined credit in terms of hours per week in pursuit of a particular subject. Letter grades were converted to numeric values and grade point averages were calculated. Minimum levels of performance for passing were established. These regulations set scholastic performance standards for passing a minimum number of credits at selected levels: freshman, sophomore, junior, and senior. Students who did not meet the minimum requirements at each level lost the privilege of continuing in school, pursuing a particular degree or both. Academic suspension from the institution became a practiced phenomenon.

Throughout students' careers, faculty members monitored scholastic performance and imposed sanctions when academic performance did not meet appropriate standards. During this period students were given the right to appeal such sanctions. Suspended students could appeal the decision to the Deans' Council for reinstatement. Of particular interest is that, although faculty involvement was implied, the final decision was rendered by central administration.

By the mid-1960s the faculty at what is now named, Montana State University-Bozeman refined further scholastic requirements. As the culture in American higher education shifted to a more adversarial role between faculty and students, the rules and regulations became more legal in definition than in previous years. The simpler times of paternalistic attitudes of faculty disappeared and legal policies and procedures emerged.

Specific to this institution, the criteria for scholastic probation and suspension involved reviews by faculty and selected administrators in progressive stages from the college to the university levels. The College

Scholastic Committee, consisting of faculty members appointed by the Dean, was given specific authority to monitor student progress and to recommend sanctions of probation, removal from the curriculum and/or suspension. Interestingly, the College Committee could only recommend to the University Scholastic Committee that a student be suspended. This committee did not have the expressed authority to impose the sanction.

During this period academic performance was more clearly connected to grade point average. The faculty members set minimal performance at 2.00 GPA on a 4.00 scale. (A cursory review revealed that most regional institutions of higher education continue to have similar GPA requirements for minimal academic performance.) They reviewed student progress at the end of each term and rendered appropriate decisions. While this process was slow and lengthy, consensus was that the GPA expressed the general quality of the student's work and should be reviewed periodically.

Students had the right to appeal the sanctions, especially decisions of suspension. The criteria for an appeal of suspension included conditions involving circumstances beyond the control of the student. Such circumstances warranted consideration of revoking the suspension at a central level and reinstating the student.

From the early 1970s to the present time, institutional policies of scholastic requirements have changed very little, with the exception of the committee review at the college level. With the advent of computer technologies, the process has evolved to electronic monitoring, recording, and notification of academic performance. What once required the direct supervision and intervention of individual faculty members now involves a calculation of credits taken divided by quality points earned. It is no longer the expectation or policy that individual faculty members engage in the review process. Suspension is the direct result of a grade point average calculation.

Although faculty members have created and monitored academic policies such as scholastic requirements from the early beginnings of the institution, their involvement in the enforcement of these policies has waned over the past century. One can argue that faculty involvement and intervention has evolved from the monitoring of all students to the distribution of final grades in individual courses. While the issues of scholastic requirements and student progress remain at the center of the academic experience, it appears that most faculty members, by choice, are disengaged from the implementation of these policies.

One could surmise that the changing relationship between faculty and students and the diversity of student demographics over the past few decades have mitigated this shift. The growth in student enrollment at MSU is an additional factor that must be considered and precludes the personal attention to each student. Faculty can no longer provide individualized services needed to

resolve issues of academic suspension. Thus the interpretation and enforcement of these policies have been passed to central academic support functions.

While academic progress has been, and continues to be, at the center of the higher education enterprise, the realities of attrition and failure are evident. In the analysis that follows, cohorts of entering freshman were tracked over time to determine if the suspension policy was having the intended effect on academic success, defined as degree completion.

MSU's Suspension Policy

MSU's current suspension policy requires students to be suspended after receiving term GPAs of less than 2.00 for two consecutive terms. A student who is suspended for the first time is required to sit out one term before returning to MSU. ***The objective of the policy is to require the student to evaluate his or her academic deficiencies, take steps to correct them, and return to the University with a stronger commitment to scholastic achievement.***

Unfortunately, a student returning from suspension continues to carry the burden of his or her cumulative GPA that was the factor resulting in the suspension. Reinstated students are placed on "probation" when they re-enroll, and the probation designation is not removed until the student achieves both term and cumulative GPAs of 2.00 or above. If the returning student does not earn a term GPA above or equal to a 2.00, he or she receives a suspension warning.

Students must have a cumulative GPA of 2.00 to graduate. The suspended student who returns and achieves term GPAs above 2.00 must accumulate enough quality points over his or her remaining college career to raise the cumulative GPA to 2.00 or above. For suspended students who receive term GPAs in the low 2's, this can be an almost impossible task.

Admission Requirements at MSU

To be admitted to MSU, a student must meet the University's admission requirements, which were adopted by the Board of Regents and implemented in the fall semester, 1991. In addition to passing a college prep curriculum, the student must have a high school GPA of at least 2.5 **or** rank in the top half of the graduating class **or** score at least 22 on the ACT (or 1030 on the SAT). These thresholds are specified for each criterion, but only **one** of the criteria must be met to qualify for admission.

Not all students submit all scores for admissions consideration. Home-school students and students from some private schools have no GPA or class percentile scores. Some students submit ACT scores; others submit SAT scores, and some both. International students usually do not take either test. By

Board of Regents policy, the admission criteria apply only to students who have graduated from high school within the previous three years, so students who graduated earlier may not have submitted any scores. The majority of students do submit this information, however, and the percentages presented in this paper are calculated based on the totals available for each admission criterion.

Results of Comparison – Suspended vs. Not Suspended

Most freshmen enter Montana State University with the intention of earning a bachelor's degree, but less than half achieve that goal. Some drop out, some transfer to other institutions, and some are suspended for poor academic performance. The suspension policy forces students to leave school for at least one term to regroup before resuming their studies. As illustrated in this paper, the success rate of those students who are suspended is not encouraging.

We examined a population of 4,933 first-time, full-time, degree-seeking freshmen by combining the freshman cohorts entering MSU for the fall semesters of 1991, 1992, and 1993. Data were collected on high school background, first-semester courses, attendance status for six semesters, and graduation. The following table shows the graduation status of suspended and not suspended students of this population by the end of summer 2000.

Status	Graduated	Not Graduated	Total
Not suspended	2117	1968	4085
Suspended	98	750	848
Total	2215	2718	4933

Of this freshman population, 848 (17%) were suspended at some time during their University attendance. Only 12 percent of the suspended students, had graduated by August 2000, compared to 52% of the students who had not been suspended. The average cumulative GPA at time of graduation for students who had not been suspended was 3.11, but the average for suspended students was 2.59, much closer to the required 2.00.

Suspension by Gender: Historically at MSU, men constitute over half the enrollment in any incoming freshman class. In this three-year cohort, 56 percent of the students are male and 44 percent are female. Overall, women have a higher graduation rate than do men. But as the following table shows, the graduation rates were equal for men and women who were not suspended. Men were suspended at a higher rate than women and were less likely to return and graduate.

Status	Graduated	Not Graduated	Total
All freshmen			
Men	43%	57%	2770
Women	47%	53%	2163
Not Suspended			
Men	52%	48%	2195
Women	52%	48%	1890
Suspended			
Men	11%	89%	575
Women	13%	87%	273

Gender does not appear to be related to the length of time a student attended MSU before being suspend. Overall, 68 percent of the suspended students are male and 32 percent are female. These percentages of students suspended remained fairly constant across time for each gender.

Year of Suspension	Men	Women	Total
After 1 year	68%	32%	270
Within 2 years	64%	36%	303
Within 3 years	76%	24%	127
Within 4 years	68%	32%	81
Within 5 years or more	69%	31%	67

The group of students suspended after one year of attendance and the group suspended in subsequent years tend to differ in several respects: the strengths of their academic backgrounds, their success in core courses, and their graduation rates. Several of the tables in this paper illustrate the differences between these two groups of students.

Suspension in Relation to Criteria for Admission: At MSU, most students are admitted based on the high school GPA criterion. The ACT criterion is met by the fewest number of admits. Of the first time freshman population examined, 15% failed to meet the GPA criterion, 26% failed to meet the class rank criterion, 38% failed to meet the SAT criterion, and 40% failed to meet the ACT criterion. As would be expected, higher percentages of the suspended students failed to meet these criteria: 30% had GPAs of less than 2.5, 49% were in the bottom half of their graduating classes, 51% had ACT scores below 22, and 49% had SAT scores below 1030. The average scores of suspended students were considerably lower than those submitted by students not suspended.

Status	Total	GPA	Rank	ACT	SAT
Not suspended	4085	3.18	68	22.9	1082
Suspended	848	2.76	50	21.9	1037

On average students suspended early in their college careers have the lowest ACT and SAT scores and high school GPA. As illustrated in the table below, length of persistence is positively related to the average scores on these measures, suggesting that academic preparation is a factor related to suspension.

Year of Suspension	Total	GPA	Rank	ACT	SAT
After 1 year	270	2.62	43	21.35	1001
Within 2 years	303	2.76	50	21.67	1032
Within 3 years	127	2.83	54	22.10	1069
Within 4 years	81	2.97	58	23.28	1085
Within 5 years or more	67	2.95	57	23.11	1069

First Year College Courses: Entering students are encouraged to initially take courses to meet MSU's core curriculum requirements. We examined the academic records of this freshman cohort to identify those students who had taken a course in mathematics, English, or science during their first semester and how well they had done. Not surprisingly, the participation rates in these classes were quite similar for students who were suspended and those who were not.

Status	Math	English	Science
Not suspended	82%	44%	62%
Suspended	80%	47%	56%

Also, the students who were not suspended tended to be more successful in these classes than their subsequently suspended peers.

Class	Total	Passed	Failed	Dropped
Math				
Not suspended	3346	62%	15%	23%
Suspended	681	30%	47%	23%
English				
Not suspended	1815	96%	2%	2%
Suspended	397	82%	17%	1%
Science				
Not suspended	2548	92%	6%	2%
Suspended	477	74%	22%	4%

Math classes posed the greatest difficulty for both groups of students. These classes had higher dropout and failure rates than either English or science classes. Students who were suspended after their first year were less likely to drop and more likely to fail than students who were suspended after a longer period of attendance. The latter had probably become savvier about their chances of passing courses that were difficult for them.

Class	Pass	Fail	Drop
Math			
Suspended after 1 year	17%	66%	18%
Suspended later	38%	41%	26%
English			
Suspended after 1 year	72%	28%	0%
Suspended later	86%	12%	2%
Science			
Suspended after 1 year	58%	37%	6%
Suspended later	81%	16%	3%

If the student's math class was calculus, the failure rate was even higher, especially for students suspended after their first year.

Calculus	Total	Pass	Fail	Drop
Not suspended	614	84%	12%	3%
Suspended	112	38%	52%	11%
After 1 year	24	8%	83%	8%
Later	88	45%	43%	11%

Of the 4933 students in the cohort, 726 (15 percent) took calculus during their first semester. One third were women and two thirds were men. A higher proportion of men than women who took calculus were suspended; the majority of the men who were suspended were majoring in engineering.

Gender	Took Calculus	Sus-pended	Engr Majors	Drop/ Fail
Men	492	91	70	48
Women	234	21	6	5
Total	726	112	76	53

Clearly, as a group, the students who were suspended after their first year of attendance at MSU had more difficulty with core courses than students who were suspended after a longer period of attendance.

Suspension as a Function of Major

Entering freshmen can either declare a major in one of the seven academic colleges or enter the General Studies program. General Studies' advisors help students identify their areas of interest and suggest courses to help them explore possible options for majors. Students enrolled in General Studies are also encouraged to take courses that will satisfy Core Curriculum requirements. Students may remain in General Studies for a maximum of two years. By the time they attain junior status, they must declare a major leading to a baccalaureate degree.

In this cohort, 27 percent of the entering freshmen chose to begin their college careers in General Studies. Twenty-one percent chose majors in the College of Engineering, and the remainder selected majors in other colleges. In the following table the distribution of entering freshmen in the cohort among MSU's colleges is illustrated. Although there are no dramatic differences across colleges between the percent of students suspended and students who were not, students who initially chose majors in engineering and general studies suffered slightly higher percentages of suspension, while those who chose majors in agriculture and education had slightly lower percentages of suspension.

	New Freshmen		**Not Suspended**		**Suspended**	
College	**#**	**%**	**#**	**%**	**#**	**%**
Agriculture	265	5%	231	6%	34	4%
Arts & Architecture	506	10%	418	10%	88	10%
Business	491	10%	409	10%	82	10%
Education & HHD	363	7%	327	8%	36	4%
Engineering	1022	21%	824	20%	198	23%
Letters & Science	761	15%	629	15%	132	16%
Nursing	198	4%	176	4%	22	3%
General Studies	1327	27%	1071	26%	256	30%
Total	**4933**	**100%**	**4085**	**100%**	**848**	**100%**

Some students stay in their original major—or another within the same college—through graduation. Others "shop around" and eventually choose a new major more to their liking. Illustrated in the following table is the movement of students between college at time of entry and college at time of graduation. Because students can only spend a maximum of two years in General Studies, it does not appear as a graduation option.

College of Entry	Total	College of Graduation							Not Grad
		Ag	A&A	Bus	EHHD	Eng	L&S	Nur	
Agriculture	265	105	1	3	7	1	20	0	128
Arts & Architecture	506	8	127	8	6	14	18	1	324
Business	491	7	6	134	29	4	34	0	277
Education & HHD	363	2	3	2	128	1	27	4	196
Engineering	1022	29	8	34	30	379	81	7	454
Letters & Science	761	7	9	7	41	18	268	6	405
Nursing	198	1	0	1	22	0	7	45	122
General Studies	1327	49	42	60	127	38	188	11	812
Total	4933	208	196	249	390	455	643	74	2718

The numbers on the diagonal show that within any given college, the largest number of graduates is composed of those who originally declared a major in that college.

This is more obvious in the table of percentages presented below, which also shows that no college retains to graduation half of its original majors. Students who originally declare majors in agriculture or engineering tend to graduate at a higher rate than those who declare other majors, but they do not necessarily graduate in those colleges.

College of Entry	Total	College of Graduation							Not Grad
		Ag	A&A	Bus	EHHD	Eng	L&S	Nur	
Agriculture	265	40%	0%	1%	3%	0%	8%	0%	48%
Arts & Architecture	506	2%	25%	2%	1%	3%	4%	0%	64%
Business	491	1%	1%	27%	6%	1%	7%	0%	56%
Education & HHD	363	1%	1%	1%	35%	0%	7%	1%	54%
Engineering	1022	3%	1%	3%	3%	37%	8%	1%	44%
Letters & Science	761	1%	1%	1%	5%	2%	35%	1%	53%
Nursing	198	1%	0%	1%	11%	0%	4%	23%	62%
General Studies	1327	4%	3%	5%	10%	3%	14%	1%	61%

For suspended students, the pattern is similar to that for all freshmen, although the percentages graduating are much lower.

College of Entry	Total	College of Graduation							Not Grad
		Ag	A&A	Bus	EHHD	Eng	L&S	Nur	
Agriculture	34	6%	0%	3%	0%	0%	3%	0%	88%
Arts & Architecture	88	0%	6%	1%	0%	1%	0%	0%	92%
Business	82	0%	0%	1%	0%	0%	4%	0%	95%
Education & HHD	36	0%	0%	0%	11%	0%	0%	0%	89%
Engineering	198	1%	0%	1%	1%	12%	3%	0%	84%
Letters & Science	132	1%	0%	0%	2%	1%	8%	0%	89%
Nursing	22	0%	0%	0%	9%	0%	5%	0%	86%
General Studies	256	1%	1%	2%	3%	2%	4%	0%	89%

Suspended engineering majors are the most likely to graduate, and suspended business majors the least likely. Of the 112 suspended students who took calculus, 76 (68%) were engineering majors.

INSTITUTIONAL IMPACTS

Based upon these data, which suggest that in the 1990s suspended students seldom graduate from MSU, we conclude that the contemporary characteristics of the policy are fourfold. The policy is:

Protectionist—It protects academic quality as determined by one measure - GPA.

Isolationist—It leaves students to their own thoughts and devices to rectify academic dilemmas. It offers "time out only" rather than "time out plus."

Reactionary—It offers limited proactive intervention for students heading toward suspension (probation, etc.).

Summative—It is not effective in terms of formatively enhancing students' progress from suspension toward success in reaching graduation at MSU; rather, it is more accurately a signal of termination.

Framed by these four characteristics, we discuss some related impacts of the academic suspension policy.

Mission and Good Will Impacts

As a state supported, land grant institution, MSU intends to serve its citizens (most directly, its youth) and its citizens' enterprises by providing quality education. The current suspension policy may serve to protect educational quality by ensuring that students experiencing a one or two semester pattern of academic shortcomings are not in the classroom. However, it may

simultaneously have a negative impact on the mission to provide a quality education and the institution's good will among the citizenry.

First, there is nothing directly educational in the policy's "time out only" intervention. For suspended students, there is no access to faculty and academic support personnel, student services personnel, or campus-based programs and resources that could help them resolve the problem(s) that are at the root of their patterns of poor academic performance. It isolates rather than educates suspended students and, as a result, most of those students never achieve a quality education from MSU.

Second, an investment to provide an educational intervention for probation and suspended students before and during a "time out plus" semester may better support the institution's mission to provide quality education to its citizens and enhance political goodwill. Today when one suggests to students that they are academically qualified to enroll in an institution of higher learning, students, parents, and other taxpayers expect that those who provide the education will also offer adequate support for those who enroll and are in jeopardy of academic suspension. A strategic intervention of "time out plus" could develop political goodwill for MSU rather than the sometimes-bitter emotions expressed by suspended citizens. Learning remains the student's responsibility. However, experts on learning and student problems should draft and provide "time out plus" interventions to enhance the failing student's chance of "turning over a new leaf" rather than expecting the student to arrive at the remedy in a "time out only" vacuum of suspension away from the institution.

Educational and Financial Retention Impacts

First, we concede that not every student should be retained. Given the 85% open admission policy and the low level of selectivity, there are MSU students in every cohort who are not well prepared. They are unfamiliar with collegiate levels of learning, may be ill-suited for the pedagogy and level of expectations in their declared major, cannot establish a healthy college lifestyle, etc. Their academic failures (marked by probation and suspension) may indicate a lack of readiness to meet the academic expectations and demands of the institution or program in which they enrolled. In such cases, the current "time out only" intervention may protect students from deepening the "academic holes" they are "digging" while not ready, but it does not contribute to retaining them so they can be educated.

We believe there are two perspectives on retention that should be considered (Borland 2001) and that from both of these perspectives we assess the policy and its "time out only" intervention to have a negative impact. *Educational retention* intends to ensure the continuation of learning for students who at admission are believed to be ready to succeed and/or could be helped to do so, and are likely going to "fit" within the institution. *Financial retention* seeks

to enhance the continuation of students as a source of revenue that, in turn, supports the continuation of educational opportunities for students who continue.

Yet, the analysis of these data suggests that retention at MSU is negatively impacted by the current academic suspension policy and its "time out only" intervention. While each suspended student was deemed qualified for admission, few were retained until graduation. Retention is not constructively linked to the suspension policy. From an educational retention perspective, the "time out only" intervention did not help these students continue learning. "Time out plus" interventions that are educational in character could assist struggling admitted students to reach the level of readiness needed to become successful.

Neither was the policy constructive from a financial retention perspective. In most cases, costs associated with retaining an admitted student (even if he or she needs help becoming ready) are typically lower than costs associated with recruiting his or her new recruit replacement. Therefore, MSU lost educational revenues when it did not offer an educational intervention for the large number of suspended students that ultimately did not continue until graduation.

It would be worth analyzing the cost of educational and other interventions for probation, suspended, and newly admitted students predicted to be at-risk regarding suspension. The return in otherwise lost tuition and fee generated revenues alone, not to mention a return on the cost of revenues already expended to recruit, admit, serve, and teach the suspended students would be considerable.

Policy Considerations and Student Intervention Strategies

There are several recommendations that we make regarding policy revision, alternative interventions, and further research on this issue.

The Policy

One must remember that this policy is a "property" that was created, approved, and sustained across many years by the faculty. It was historically anchored by the faculty in a concern for academic progress toward quality education. The letter and spirit of it suggest that faculty intended to monitor and stop struggling students, and then they headed responsive students in a right direction. It was not intended to "weed out" weaker students, but to prepare them for a second chance. Contemporary faculty may not recall or have ever known the early motive(s) for establishing this policy. This may be evidenced by an observation that the anchor slipped. It is currently set in a concern for meeting an established standard that is measured by grades, monitored by computer programs and enforced by administrators rather than by faculty, and the policy neither suggests nor requires anyone (administrators or faculty) to intervene to educate these students.

Recommendation 1 ***Faculty must revisit their policy through a contemporary lens.***

In recent years the dominant paradigm in the academy has changed from one emphasizing teaching to one focused on enhancing student learning. Within which paradigm would contemporary faculty view this long ago established policy? If asked to consider it in terms of enhancing learning, they may still see the need for action to protect academic quality, but they may also see that the policy needs to be refined to curtail whatever is contributing to students' academic failure and to provide interventions that are educational. As far as a revision of the policy is concerned, there are three notes we add.

1-A Faculty must realize that this policy is theirs, they should reclaim their responsibility, and they must not shift that responsibility to the registrar and administrators who are often asked to serve as the enforcers of policies that were established in another era and have not been examined since.

1-B Faculty will not be convinced to refine this policy if the motivation is retention. However, they may be convinced that the policy does not contribute to enhancing student learning for students who once demonstrated the qualifications to be admitted, are now in academic trouble, and wish to remain at the institution.

1-C The policy and the prescribed intervention that supports it should be expanded to consider more students who are at risk of suspension: on probation, calculus-intensive program students, first year students, etc.

We noted a difference in the proportion of students returning to the institution and graduating between first-year students who are suspended and those who are suspended subsequent to that break point.

1-D A separate policy for first year suspended and post-first year suspended students should be designed. An example of this would be a "fresh start" policy that a second year student, who may now be more ready to succeed than he or she was in their academically devastating first year. She or he could utilize this policy to wipe-out the poor start exhibited in their first year of transition, maturation, major-seeking, etc. and may be more likely to continue than if they were mathematically in jeopardy of ever again rising above a 2.0 GPA.

Interventions

We now offer several recommendations regarding interventions.

Recommendation 2 ***The "time out only" intervention should be replaced by "time out plus" interventions that, as much as is possible, should be designed to address specific students' or student group academic struggles.***

The "time out only" intervention apparently did not contribute enough to the success (returning to complete a degree at MSU) of many suspended students. While "time out only" for suspended students may not help, "time out plus" for suspended students might offer more hope.

Why "time out plus"? While our database does not include quantitative or narrative data provided by these suspended students, our experiences with them and the literature suggest that students who are in academic trouble can trace their difficulties to multiple factors. These include academic and life issues related to time management (education, work, life responsibilities, leisure, sleep, finances, etc.), substance abuse or victimization, relationships, health, study skills and habits, non-compensated learning or physical or emotional disabilities, etc.

"Time out plus" what? Generally, by "time out plus" we mean offering suspended students alternatives to spending time away from campus. The alternatives would be provided on campus, the students would remain enrolled (in a controlled and limited way), and would remain connected to campus community (personnel, services, resources, etc.). For example, the students might enroll in a course or two they need to repeat, take a study skills course, use the math tutorial program, and receive guidance and counseling. The alternatives should be educational and, as much as is possible, be designed to address the specific circumstances of students and to keep them learning.

> ***2-A*** Suspended students should enroll only in prescribed courses, on a limited credit hour per semester basis. A reduction in academic load may be helpful to the student maintaining academic progress, and would give them access to the support services of the institution. An ideal might be to enroll students in one or two courses they need to repeat.
>
> ***2-B*** A specially designed Academic Skills Course should be required of each suspended student.

2-C Services such as tutorials (math, writing) and counseling (should the suspension be due in part or in whole to non-academic matters) should be designed to provide students with a constructive intervention.

These interventions would generate revenues and good-will for the institution, which would otherwise have been lost, while keeping students learning.

Recommendation 3 ***Strategies to enhance students' preparation for and successful completion of math and, in particular, calculus courses must be developed.***

The high number of suspended students that were unsuccessful in math and, particularly, calculus courses suggests that an intervention is needed. There are a high number of well-qualified males in engineering and other traditionally male dominated science fields, yet they are suspended in large numbers due in part to failures in math and calculus (worth four credits). Possible strategic interventions could include, but are not limited to, the following:

3-A Provide special "Calculus for Engineers" sections wherein practical engineering illustrations and applications are used.

3-B Provide a summer session course and/or workshop of college-level "pre-calculus" for students who are at-risk of suspension: students intending to enroll in the sciences and engineering; those that have lower than mean pre-admission scores on SAT, ACT, etc.

3-C Expand tutorial services for at-risk and suspended students who re-enroll in these courses.

Further, a measure of cognitive readiness may be as or more sound a basis for when to schedule/require the math/calculus courses than a series of professional prerequisites. Given that male adolescents are slower to develop in regard to abstracts and related cognition, we further suggest:

3-D Curricular scheduling/sequence related to mathematics should be developmentally based. For example, calculus could perhaps be more readily understood in the second semester than in the traditional first semester of the engineering curriculum.

Data Systems to Support Student Attrition and Retention Studies

The data analyzed in this project were taken from the University's student record system. While there were data for each student for each semester of enrollment, this record system did not give us all the data needed for this study. In addition, this system functioned in support of the operational needs of the

Registrar and other student service units, and therefore updated historical grade point averages if the student had retaken a course and earned a higher grade. As such, we were not able to examine the relationship between the students' cumulative grade point average at the point of suspension and his or her sequent GPA and graduation status.

Older student records systems, such as the one used to obtain the data for this analysis, often do not carry historical data at the desired level of detail. Newer student records systems may maintain historical data in greater detail, but it may be difficult to retrieve for specific groups of students. Creating a database for the cohort of interest using software such as Access, SPSS, or SAS and updating the cohort file each semester will ensure that the data accurately reflect each student's status at any specific time during his or her enrollment. We suggest that the design of such a data system take into consideration the data needed to study both retention and attrition issues (including suspension outcomes).

Peter Ewell (1987) in A Primer on Institutional Research discussed the principles of conducting retention and student flow studies. In this discussion, he presented a model for the development of a student-tracking database and proposed the data elements to be included. While the technology that we use today has changed significantly since this monograph was published, the conceptual framework proposed by Ewell is still appropriate when considering the development of a student tracking system. Adopting this structure, data in such a system can be thought of in two categories: Fixed and Variable or Term.

Fixed data elements are those attributes that do not change over the course of the student's enrollment. These elements include demographic data, high school background data, and any postsecondary experience before attending the institution.

Variable or Term data elements are those data that reflect academic activity and status each semester or academic term. These data elements are typically entered into the student tracking system at the end of each academic term and include data that reflect the student's academic experience, performance, and status. For students graduating during the term, a final segment of the file needs to be created that includes variables reflecting graduation related information.

Specific data to be included in a student tracking system will depend to some extent upon institutional priorities, but we offer the following recommendations for consideration:

1. Demographic data: Institutional ID, name, birth date, gender, race/ethnicity, residence, and socioeconomic information, if available.

2. High school background data: graduation date, high school attended and location, size of graduating class, rank in class, GPA at graduation, GPA in specific courses, and test scores (e.g., ACT, SAT, GED).

3. Previous postsecondary experience data: institution attended, cumulative GPA, major, number of hours attempted, and performance in specific courses of interest (eg. math, sciences, freshman seminar).

4. Academic data: (collected each academic term) major, credit hours attempted, credit hours earned, term GPA, cumulative GPA, participation and performance in specific classes of interest (e.g., math, science, freshman seminar), suspension status, and type of suspension, if relevant.

5. Graduation data: graduation date, degree, major, minor, cumulative GPA, total credit hours attempted, and total credit hours earned.

Suggestions for Further Research

There are several research possibilities beyond our investigation that we recommend:

1. Qualitative approaches to determine why suspended students did not meet appropriate academic standards and after suspension did or did not return to complete their intended degrees.

2. The study presented in this paper should be conducted for transfer students.

3. The relationship between time at the institution when suspended and academic performance upon return to the institution should be explored. Such a study might provide insights about remedial or special programs that would increase the numbers of students graduating.

4. Given the ease of transfer to other institutions, particularly within state systems, using system and other national student tracking databases, academic performance of suspended students attending other institutions should be evaluated.

References

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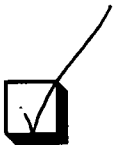

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