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AUTHOR McLaughlin, Gerald W.; Brozovsky, Paul; McLaughlin, Josetta S.

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ABSTRACT

This paper discusses the role of institutional researchers in changing attitudes within institutions of higher education on the importance of efforts to improve student retention. It describes activities undertaken at Virginia Tech to determine why students voluntarily withdraw from the university in the context of changing attitudes within the university. Kubler-Ross's five stages on death and dying are used as a model for attitude change at the institutional level. The five stages are: denial, hostility, bargaining, depression, and acceptance. Suggestions are made concerning how to assist the institution in moving through the five stages from denial to acceptance. These principles are illustrated with summaries of three studies at Virginia Tech: (1) a pilot study to obtain basic information on withdrawing students; (2) follow-up surveys of students who left after one year or less; and (3) a program of 18 specific projects to foster student success. Several challenges for institutional research are identified, including the role played in persuading individuals and stakeholders that student retention should be viewed as a strategic activity. Appendices provide additional detail on the surveys conducted at Virginia Tech and on the student success projects. (Contains 26 references.) (LEE)

Strategies in Retention Research

by

Gerald W. McLaughlin
Institutional Research & Planning Analysis
Virginia Tech

Paul Brozovsky
Institutional Research & Planning Analysis
Virginia Tech

Josetta S. McLaughlin
College of Business & Economics
Radford University

Presented at the AIR Forum

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Jean Endo
Editor
AIR Forum Publications

Vincent Tinto has pointed out that "(m)ore students leave their college or university prior to degree completion than stay" (1993, p. 1). The concern among administrators in higher education over why these students exit the institution has increased due to the turbulence of today's educational environment. As a response to federal and NCAA data-reporting requirements, many colleges and universities have recently begun to collect data on student retention and graduation. These data are having a secondary effect by providing a vehicle for understanding the complex circumstances surrounding departing behaviors. For Institutional Research to be successful in supporting these new efforts, it needs to go beyond simply collecting and reporting these data (Delaney, 1997). The major obstacle to supporting efforts to better understand student retention is persuading the numerous stakeholders at all levels of the university that research in retention should be considered a priority. To put it simply, institutional researchers must persuade others that student retention should be treated as a strategic issue.

Strategic issues are issues that are long-term and that can have serious consequences for the future success of the organization. The strategic implication of student retention and exit have gained in importance for institutions of higher education in today's environment. Parents and students are concerned about the likelihood of students' completing their program of study, especially given the increasing costs of attending a college or university. In some states, legislatures are becoming involved in retention issues by collecting information on performance indicators while in other states, they are using the information to make decisions about funding and policy. University and college administrators cannot ignore the implications of such trends.

While many higher education administrators may not consider student retention a priority, the subject has a long history as a subject for academic research. A unifying theme for many of

the academic studies is the idea that a student's involvement in the social environment as well as the academic environment is critical to success in college. For example, Pace (1979) found that the combined influences of the college environment as perceived by the student and the effort expended by the student lead to student development. The quality of student effort is the major determinant in the amount of learning and is related to remaining in college. His work has been extended to community colleges by Ethington and Polizzi (1996). Similarly, Tinto (1993) found that a student's sense of academic and social belonging impacts on retention and graduation. This sense of belonging is increased or decreased through interactions with the academic and social environments of the university. His findings have been extended to include student expectations (Braxton, Vesper, & Hossler, 1995).

Research has shown that institutional characteristics and culture have both indirect and direct effects on the student's propensity to become involved in both academic and non-academic activities (Braxton, Vesper & Hossler, 1995). The college also has an impact on determining the amount of student involvement and thus the gains and the retention (Astin, 1993). Davis and Murrell (1993), Middaugh (1992), Ewell (1993), Pascarella and Terenzini (1991) and Terenzini (1987) have good solid reviews of the issues and theories involved in student retention.

The purpose of this paper is to describe how institutional researchers can help change the perceptions of their institutions on the importance of retention and, as a result, develop a better understanding of the need for student retention efforts within the institution. We include discussions of activities undertaken at Virginia Tech to determine why students voluntarily withdraw from the University. Descriptions of these activities are integrated into a discussion of changing attitudes within the university.

STUDENT RETENTION AS A STRATEGIC ISSUE: A CHANGE IN PERSPECTIVES

Changing long-held views within an organization concerning the importance, or lack of importance, which should be placed on student retention as a strategic issue begins with individual stakeholders. Over time, efforts to impact stakeholder perspectives result in changes in organizational culture and in new approaches for dealing with strategic issues. Institutional researchers can assist in this change in significant ways, most importantly, by reframing issues within a strategic context.

In this paper, we demonstrate the potential contribution of Institutional Research in changing attitudes about the importance of student retention by drawing on the work of Kubler-Ross (1993). In her work on death and dying, she identifies several stages that an individual goes through before he or she is ready to accept what is perceived as undesirable change. Kubler-Ross identifies five stages -- Denial, Hostility, Bargaining, Depression, and Acceptance. Denial is the refusal to believe that the problem exists for a specific college or person. Hostility is the anger that lashes out at available targets after the presence of a problem becomes undeniable. Bargaining asks for a favor in exchange for good behavior. Depression is a sense of great loss which results in inertia. Acceptance is the understanding that there is a need to solve the problem, in our case, the need to address student retention as a strategic issue.

In our case, changing the way an institution deals with student retention is, in fact, analogous to loosing an old and dear friend. That friend is Status Quo. Too often we become comfortable with Status Quo since it has been with us for a long time, and it defines the way we have always done things. To change means increasing levels of anxiety and uncertainty, and the loss of comfort. It is likely that adjusting to this loss can come only after denial, hostility, bargaining, and depression.

The following is our view of circumstances surrounding the management of student retention within the institutional context. Suggestions are made concerning how to assist the institution in moving through the five stages from denial to acceptance.

ADDRESSING STUDENT RETENTION: APPLYING KUBLER-ROSS'S FIVE STAGES

The Denial Stage

The most difficult stage for many in the development of a new and more effective support system for student retention is to convince key individuals and stakeholder groups within a college or university setting that there is a problem that needs to be addressed. For example, within the ranks of faculty, key individuals will deny the existence of a problem. They may view lower retention as an indication of higher quality standards within the institution. They may believe that when a large percent of students fail to complete their program, the remaining students are more intelligent and that they perform far above that expected of the average student. Furthermore, the faculty may argue that increasing retention will negatively impact educational standards.

Demonstrating that a problem exists under these circumstances requires that steps to overcome denial must first be taken before student retention can be given serious consideration as a strategic issue. Otherwise, results of information provided by institutional researchers may not be seen as authoritative or legitimate. Creating legitimacy and demonstrating that a problem exists with the current approach of the institution to addressing issues surrounding student retention can be accomplished. We have identified the following seven tactics found to be useful:

1. *Educate key stakeholders concerning population trends.* Examination of high school graduation rates and numbers of high school graduates, especially in states where rates are going down, can provide a starting point in the communication process. Stakeholders understand and are easily approachable when it can be shown that demand for their services is decreasing. Also, provide information on the proportion of students applying to the institution and the yield of applicants who can be expected to enroll. Include variables such as

the "quality" of the potential students in terms of high school QCA, SAT, or other locally acceptable indicators.

2. *Analyze data at the college and department levels.* Identify key individuals providing leadership within departments and colleges. Demonstrate the probable impact of student retention rates at their organizational level. Tie implications of student retention to department and college resource allocations, both current and future.

3. *Examine the "killer" courses.* Examine specific courses and distribution of grades in those courses to identify situations where more than half of the students fail to be successful. Monitor the success of various majors within academic levels. Factor in data on the withdrawal process, i.e., the process of students leaving the courses before the final drop date. Such information can be used by programs within the various departments to determine the appropriateness of the current curriculum, whether new courses should be added or old courses dropped, whether course objectives need to be revised, and whether there is a need for tutorial services.

4. *Benchmark a neighbor.* Examine student retention success as compared with the success of a similar school or of schools located nearby. National data are becoming available through various centers and also through various college guides. Benchmarking should include measures of success not only at the institutional level, but, if possible, also at the college and department levels. Key stakeholder groups will better comprehend the issues surrounding student retention if rates of their institution are expressed relative to some target that gives the rates meaning.

5. *Repeat the horror stories.* This is a strategy that can be valuable to describe special cases related to student retention. If examples surface of students who were not successful and exited because of some non-academic situation or set of policies, this identifies a problem. A horror story is persuasive when a senior administrator or executive finds the story compelling and agrees to investigate the circumstances surrounding the student's exit. Horror stories are also effective when they break a commonly held myth concerning the reasons for exit of students, or if they cast great doubt as to the strategic niche of the institution. Though the horror story neither proves nor disproves a belief, it certainly can encourage key stakeholders to ponder the important issues.

6. *Attach money to the loss of students*: If budget officers are involved in the discussions of student retention, attaching money to the loss of students is the most effective strategy available. Multiply the loss of students times the number of years they are not retained times the fees they would have paid. The dollars add up fast. The sheer magnitude of the dollars involved will change perspectives on the need to address student retention issues.

7. *Create goal anxiety*: The top administrative team of any institution sees as one of its major responsibilities the identification of a mission and of goals and objectives. If it can be shown that student retention is a factor in meeting goals and objectives, and supporting the mission of the institution, top administrators will react. On the other hand, if the institution has failed to set a goal for student retention, then administrators will usually see no problem. It may be necessary, therefore, for institutional research to identify a student retention goal or objective

which is not being met. For example, institutional researchers can recommend the use of state performance indicators for retention and graduation rates to set institutional goals.

The Hostility Stage

Once the problem of denial has been overcome, the next tendency of key individuals or stakeholder groups is to become hostile. There is obviously a problem with retention, and just as obviously, the problem is not their fault. Too often, the conversation ends with emphasis on the term "fault". This traditional spin-the-bottle approach frequently leads to the following criticisms:

- The admissions group is bringing in dumb students.
- The student services group is not providing an adequate living-learning environment.
- The faculty is intent on flunking out good students.
- Financial aid isn't spending the money wisely.
- Career placement didn't do a good job on career counseling.
- The administration has policies in place that turn off students.

The list goes on. Institutional researchers can effectively deal with such attitudes through a variety of means. We have identified the following tactics as useful in dealing with hostility:

1. *Displace the hostility*. Link the problems surrounding student retention to external forces. For example, the high schools may need to do a better job in preparing students for college. Or, decreasing birth rates and decreasing state funding are creating problems over which the institution has limited control. Whatever the tool chosen for displacement, the ultimate goal is to refocus the stakeholder's attention on finding a solution or means for dealing with student retention issues.

2. *Demonstrate the inter-connectiveness of student retention issues*. The problems and issues surrounding student retention do not surface sequentially. They are non-sequential, interactive, and interconnected, and they impact many stakeholder groups within the institution. Institutional researchers can demonstrate the linkages by developing a set of questions that assist key stakeholders in identifying what is important and what defines success at other institutions. Presentation of either live or video experts can be shared by stakeholders and can help establish the linkages between key groups that impact retention. Analytical, political, and social valuing individuals should be involved in the discovery process. These individuals then form a core group with which institutional researchers will be able to work and a group that will become critical to moving the process of awareness of the importance of student retention to the next stage.

3. *Educate stakeholders about problems and issues surrounding student retention*. By identifying other institutions having similar student retention concerns through review of the literature, you are better able to demonstrate that the problems of retention are very complex and that the reasons for these problems are interrelated. The discussion by Davis and Murrell (1993) suggesting that the constructive engagement of the student as a responsible participant in the learning process can be used as a vehicle for constructive communications with deans, vice-presidents, and student groups alike. Institutional researchers can inform and update all stakeholders on the state of knowledge concerning student retention.

4. *Encourage open debate*: Institutional researchers can help create an atmosphere that encourages open debate and lets individuals express their opinions concerning issues surrounding student retention. The collegial process is theoretically built on reasoned advocacy, but it will likely become evident that stakeholders have brought with them some "baggage". If the discussion can be contained within the institutional process, such as the faculty senate or other governance process, then successfully reaching a state of reasoned understanding about the strategic importance of student retention can be realized.

5. *Conduct a pilot study which gets at a prime target group*. In preparation for an institutional program to address student retention, Virginia Tech administered a broad telephone survey to 521 students who were enrolled in Fall 1994 and were academically eligible to return in Fall 1995 but who did not do so. This study interviewed students on the reasons students chose our institution, how satisfied they were with their choice, and why they left. The survey yielded useful information. For example, results revealed that the reasons for withdrawing differed for students across different class levels. Senior were more likely to cite financial problems or problems with course availability while sophomore were most likely to say they were transferring to a different school. Freshmen tended to leave for social reasons, with almost two thirds of the respondents enrolling in a different college. By contrast, most students not currently enrolled intended to enroll again in the future, with only 4% indicating that they do not intend to return to college. A brief summary of the findings of the survey is given in Exhibit 1.

EXHIBIT 1

SURVEY 1: THE PILOT PROJECT

Survey 1 was designed to obtain information on who was withdrawing, why they were withdrawing, what they were doing in lieu of returning, what their plans were for the future, and what might we do to facilitate their return. There were 521 respondents who were registered in Fall 1994 but not in Fall 1995. The respondents were relatively evenly distributed by class level.

Analysis of the interviews revealed three primary concepts of concern when examining student retention. They were choice, satisfaction, and exit. Results on each of the three concepts is discussed below.

Choice: Survey results revealed that the most important reasons given by students for attending Virginia Tech were academic program reputation and quality of instruction. Cost and campus culture were of moderate importance. Whether family and friends attended Virginia Tech was the least important.

Exhibit 1 continued next page

Exhibit 1 continued:

Satisfaction: Students reported their satisfaction with experiences while attending Virginia Tech on a scale of 1 to 4 with "1" being 'very satisfied' and "4" being 'very dissatisfied'. The students were most satisfied with feeling physically safe (1.31), making friends (1.43), and Virginia Tech's sports program (1.47). They were the least satisfied with the adequacy of financial aid (2.20), finding employment within the area (2.18), and faculty advising (2.04).

Exit: When asked why they left, multiple responses were recorded by interviewers. Personal reasons was the single most important reason for leaving (35%), including deciding that college wasn't what they expected or wanted (21%), medical reasons (7%), family reasons (4%), and/or leaving to get married (5%). Almost as frequently mentioned was selecting another college that offered a better or more relevant educational experience (31%). The third most frequently mentioned reason for leaving was dissatisfaction with academics at Virginia Tech (23%). The respondents cited either academic problems (20%) and/or the quality of the faculty (4%). Of comparable importance was the lack of adequate financial support (20%). The fifth most important reason for leaving was dissatisfaction with the cultural and social environment (16%) such as the location of Virginia Tech (10%), feeling that Virginia Tech was not a friendly place (7%), lack of good housing, food, or facilities (1%), and/or racial/gender bias (.6%).

Additional information on student surveys conducted at Virginia Tech can be found in Exhibit 2 and in Appendix A.

The Bargaining Stage

Once the hostility stage has passed, the next tendency among stakeholders is to look for the quick fix. Various stakeholder groups bargain with one another to find a solution that fits their particular interest. For example, if money is put into Admissions, we can get a better group of students. If we better train the counseling staff, they can be more responsive to student needs. If we implement programs to reward outstanding teachers, then students will be more confident that we encourage excellence in teaching. The positive aspect of this stage is that individuals and stakeholder groups are agreeing to do something about the problem, i.e., bargaining to get their solution in place, in order to express their growing recognition that problems may exist in the area of student retention.

The "quick fix" is not inherently bad. However, it runs a serious risk in that it can delude key individuals and stakeholder groups into believing that problems have been solved. A better

solution is to "dig" into the situation and identify the barriers to involving students and developing a culture that supports student retention.

The role of Institutional Research is to help the institution avoid this pitfall by protecting the visibility of questions concerning why students exit the university. This can be accomplished through surveys, database construction, report generation, and through facilitation of open discussion. Four tactics are identified below.

1. *Conduct broadly constructed surveys on the various key student groups.* As suggested by our pilot project, initial student surveys should include those who stay, those who left, and those who are planning to leave. Follow-up studies should be designed to build on the pilot study as well as the growing body of knowledge. A brief overview of findings from two follow-up studies conducted at Virginia Tech is given in Exhibit 2.

EXHIBIT 2

THE FOLLOW-UP SURVEYS

At Virginia Tech, we conducted two additional surveys, one for students who left after one term at the university and one for those who were enrolled in the Spring of 1996 but who did not register at that time to take courses in fall 1996. These surveys provided additional insight on exit behavior. Results revealed that the primary reason for not returning to the institution is a general failure to form an attachment to the university and to become actively involved and absorbed into its culture. This is reflected in the non-returning student's failure to feel accepted by the university, to establish strong friendships among the students, and in their relative dissatisfaction with the faculty and advisors, their failure to maintain contact with faculty and advisors, and their apathy with regard to participation in student organizations. The implication is that poor academic performance does not appear to be as directly related to voluntary non-retention as does poor social attachment.

The follow-up studies gave stakeholders information that helped avoid the pitfall of the quick fix by enhancing faculty and administrator understanding of the role of faculty and the importance of their involvement with student retention efforts. Faculty and student involvement are clearly critical components in the differences between those who stay and those who leave. The three items that had the largest difference in satisfaction (non-returning students less satisfied than returning students) all involved faculty interactions with the individual student. Furthermore, the lack of satisfactory interactions with faculty is an extremely important part of social isolation, a variable that has been shown to be a good predictor of the intention not to return. With respect to the students involvement, the students who had registered were much more involved and somewhat more satisfied than those who did not register.

2. *Develop student retention databases.* Make data on student retention available for use by interested groups and individuals. Our database includes a series of student census files and a longitudinal file that can be used in various types of studies, including dissertations and office projects. This has allowed for differentiated studies, particularly for individuals concerned with retention among minority groups. It has also been used in predicting performance of students in various individual classes (Beaghen, Brozovsky, & McLaughlin, 1996).

3. *Bring in experts.* As with the hostility stage, experts can help move the institution through the bargaining stage. The experts can talk about the strategies that work in student retention and those that don't work. Let the expert support Institutional Research's contention that cooperation is needed among key groups. Talk about the integrated use of resources and how these resources can make a difference in understanding student retention issues. Request that the experts lead discussion on turnaround strategies.

4. *Visit places that have had success.* Take a group of "Chiefs" and "Indians" to places which have made big changes in the way they deal with students. Talk to people at the University of Delaware about their one-stop student services building. Talk to people at the University of Wyoming about their freshman class on the university. Identify best practices and visit the campus where these best practices have been implemented. Get a feel for what real change requires.

The Depression Stage

Recognizing the complexity associated with student retention will likely result in a period of depression among concerned individuals and major stakeholder groups. They may suggest that the solutions seem to take too much time and require too much money and too many people. This may or may not be the case, depending on the institution. However, it must be recognized that more time with students requires more time on the part of faculty and staff and will be an increased cost to the institution. There are competing forces pulling on the resources of the institution and on its key groups and individuals. The depression that emerges in response to these forces can lead to burnout or contribute to a burnout currently in place. This problem is particularly critical and dangerous if the responsibility for dealing with the student retention problem falls on a relatively small group of "good guys".

Dealing with depression and the burnout that potentially accompanies depression is problematic. Burnout can manifest itself in the continued fatigue of individuals who must address retention issues, in the loss of valued personnel who opt to exit the institution rather than "deal with the problems", and in an increased focus on the here and now rather than on development of effective retention strategies for the future. There are some relatively inexpensive tactics which help deal with these specific problems.

1. *Involve students in retention efforts.* Bring students into the process to energize and revitalize the good guys as well as to bring their personal experiences into the process. They can also act to discourage those individuals who avoid risking innovative solutions since students do not carry the same baggage and are much less likely to anticipate failure when new ideas are suggested. Their lack of experience means they are less likely to defeat themselves before they try to implement new and creative programs.

2. *Involve more diverse stakeholder groups in the process.* Broaden the base of concerned stakeholders. At this point, it is very likely that the only individuals involved in the struggle are those whose jobs are to improve retention or who are irritated over the existing processes. Triple the number of stakeholder groups working on the issue through identifying friends who are interested in the well-being of students. Get them involved individually, creating additional information about student retention through their input. Engage teaching faculty and academicians through creation of independent studies and theses focusing on retention-related issues. For example, one of our undergraduate students is exploring the issues of civility in student-student and student-faculty interaction, and a graduate student is doing research on female retention in male dominated disciplines.

3. *Celebrate success.* Reward departmental efforts that improve the learning, success, and retention of students. Create luncheon seminars where results of research on retention can be presented. Develop mini-grants to encourage research relevant to your university. Institutional researchers can provide support in the design and analysis of faculty projects. Finally, generate and distribute reports documenting success. As noted earlier, our office surveyed students in a pilot survey, and unexpectedly, the trend for number of lower division students returning for the second semester Freshman year improved based on previous trends. Keep the institution advised when the unexpected happens.

4. *Build momentum through linkages with other programs.* Our institution has an active and successful outcomes assessment program. It was created in response to a state mandate and a recommendation from the Southern Association of Colleges and Schools. The assessment director has already been actively dealing with retention issues. He initiated a mini-grant program which funded several dissertations on retention, collected data on retention, supported studies related to student satisfaction and engagement, and advised numerous committees on retention-related issues. Our Vice President of Students has reinforced the process with a research committee.

5. *Tie retention to external stimulation.* As in the case of displacement to get stakeholders through the hostility stage, external stimulation can help get the institution through depression. A state mandate and a recommendation from the Southern Association of Colleges and Schools can be mechanisms for jarring stakeholders out of depression and refocusing them on the importance of student retention as a strategic issue. For example, our concern is reinforced in our state since the Department of Planning and Budgeting instituted a measure of retention and graduation as part of their performance indicator package. This type of influence stimulates stakeholder groups to move forward in addressing retention issues.

6. *Beware of the committee trap.* Avoid committees and projects that spiral down into oblivion. For example, several years ago, we had a committee on retention that spent several years in creating a series of recommendations. Some recommendations were implemented but most were not. In general, the committee's efforts, through lack of using its results, passed into oblivion. This type of event will inevitably be cited by some as proof that nothing will or can be done. Institutional researchers must build the case that "the devil is in the implementation." Recommendations from a committee, no matter how well intended, have no meaning absent an action plan that is supported by the larger academic community.

The Acceptance Stage

Concerns, behaviors, values, and attitudes begin to change as you move into this stage. The role of data and research need to make a parallel transition in order to become the "tool" rather than the "club". The problem has been diagnosed and strategies for changing perceptions identified. At this point, institutional researchers should already have documented what, if any, progress has been made in retention. This includes bringing the issue of student retention to the forefront in the minds of relevant stakeholder groups. Tactics at this point become more visible to the larger, overall academic community.

1. *Organize key stakeholders into some type of task-oriented group.* There are likely numerous retention activities occurring in every department and college. The problem is that the activities may be narrow in scope. Furthermore, individuals and stakeholder groups have a limited perspective on the issues and how to address any associated problems within the larger institutional context. Our strategy was to form a committee that included Institutional Research , faculty scholars, academic administrators, the Dean of Students, the Faculty Development Director, and representatives of outcomes assessment and the honors program. The committee was charged with making recommendations on student retention activities to the Vice Provost for Academic Affairs.

2. *Allocate funds sufficient to signal that student retention is important at the institutional level.* Putting money on the table is always a good way to break through depression and enhance the probability of a high level of acceptance. At our institution, we have entered our first year of a series of programs referred to as the Student Success Initiative that are designed to improve student success. Successful programs will be main-streamed in the Fall of 1997. This initiative, further described in Exhibit 3, focuses on student success. Of course, we hope that this will also result in the improvement of student retention but its focus on success does recognize that retention is not the appropriate outcome for all of our students.

EXHIBIT 3

THE STUDENT SUCCESS INITIATIVE

The project started in Fall 1996 with the establishment of a committee of about 20 faculty, administrators, and students. The Vice Provost for Academic Affairs served as the chair of the committee. The administrators included department heads, those in deans' offices, a vice-president, and a coordinator of the projects. Eighteen projects were selected, evaluation plans were refined, and about $400,000 were invested in the various initiatives. The intent was to identify the things the university should do differently to improve the success of its students.

Almost all of the projects involved increasing faculty/student interaction and advising the student. In addition, many of the projects involved the use of advanced undergraduate helpers, faculty mentors, and small group processes. The intent was to pursue the strategies which made the student more of an active participant in the learning process. Some of the projects were focused on identifying the amount of risk for individual students, some of them focused on development of living-learning abilities, some of them relate to developing general academic skills in selected technical fields, and some of them dealt which modifications of teaching in specific classes. The specific classes are some of the "killer courses" where large numbers of students traditionally fail. Some of the programs involve voluntary participation and some of them are mandatory.

The mid-term reports have been positive with some of the most exciting results occurring for faculty and the advanced undergraduates who are working with the programs. This summer, we will evaluate the programs to identify some better ways to improve student success. The evaluations will look at participation, persistence, performance, and generalizability. It is evident that the use of human contact with the students is going to be successful and it is also evident that making the time and individuals available will be a resource issue. At the same time, as members of the mathematics department have noted, if the students pass the first time through Calculus, the teaching load is reduced.

A list of Student Success Projects by academic unit, directors, and title is given in Appendix B.

3. *Incorporate student retention into strategic enrollment management.* We have seen many institutions develop a process for integrating enrollment management into their administrative structure (Dixon, 1995; Hossler, Bean, and Associates, 1990). Often times, these institutions have started by developing committees, creating and integrating prototype programs and the

retention committee into a permanent structure for housing retention activities , and assigning this function to a senior administrator much in the same way that admissions and financial aid is structured. If we accept Chandler's 1962 theory that structure follows strategy and if retention is to become an important part of our strategy, then it requires and deserves a location within the structure on par with other comparable functions within the area of enrollment management.

4. *Incorporate findings from the literature into your decision model.* Reinventing the wheel is inefficient. Start with published information on what works and apply the model to addressing student retention issues affecting your campus. For example, in a case study of the environment and key events surrounding an institution, Kinnick and Ricks (1993) identify four subcultures as key to successful implementation of a retention agenda – 1) students who want immediate change, 2) administrators who want improvement with no increase in costs, 3) faculty who want to learn within their own paradigm, and 4) policy makers who want to know the bottom line and the costs associated with those changes that need to be made. The key decision making steps identified include 1) defining the problem, 2) listening to student voices, 3) expansion of data gathering, and 4) implementation of pilot projects. Read and share articles, such as the Kinnick and Ricks case study about other institutions, with individuals and stakeholder groups. Use the experiences of other institutions to develop a proposed prototype for your institution.

CONCLUSIONS

The intent of the above discussion is to emphasize the need to understand and go beyond basic research to improve retention or to promote retention efforts at all levels of the institution. However, the surveys were critical to the successful efforts to redefine student retention as a strategic issue by confirming that our institution shares the same complex problems identified at other colleges and universities. We know based on previously published research that students tend to be successful at institutions that enhance their ability to feel good about themselves. We know that there are numerous and complex reasons why various types of students feel good about themselves. In addition, we have come to accept that no institution is where all students should be.

We also showed through involvement of students in retention efforts that the students who are an active participant in a constructive change process are more likely to feel good about

themselves than are those students who are passive observers. Our experience at Virginia Tech taught us that the institutional culture had to change in order to move to where we need to be with student success and retention. The strategies discussed above are designed to help shape tactics for supporting this needed change.

A number of challenges for Institutional Research have been identified. Most important is the role played in persuading individuals and stakeholders that student retention should be viewed as a strategic activity. This role needs to take advantage of the various sources of influence available to Institutional Research (McLaughlin, & McLaughlin, 1989; McLaughlin et al., 1987). In addition, institutional researchers need to work to develop the "issue intelligence" needed to support an understanding of the issues related to retention within the context of the institution. As defined by Terenzini (1993), this involves understanding the decision process and the political nature of the institution. It requires that we identify the key stakeholders, understand their concerns, and help them deal with their problems. In Kubler-Ross's terms, we can nurture change by helping key stakeholders as they grieve over the loss of the Status Quo.

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APPENDIX A

SURVEYING: THE INITIAL EFFORT

Published research by academicians provides the guidelines for what is likely to cause withdrawal from any college or university. However, each individual institution and/or campus will have issues that are of critical importance for that specific entity. Thus each institution or campus should undertake a study of the particular issues of importance and should design interventions to meet those specific issues. As our first step, we chose to study the issues for our institution through a series of telephone surveys of students who voluntarily withdrew from the University or who failed to register for the upcoming term.

Methodology

Three surveys were conducted to collect data from non-returning students. Survey 1 was designed to obtain information on who was withdrawing, why they were withdrawing, what they were doing in lieu of returning, what their plans were for the future, and what might we do to facilitate their return. There were 521 respondents who were registered in Fall 1994 but not in Fall 1995. The respondents were relatively evenly distributed by class level.

Based on the results of Survey 1, it was decided to limit the second and subsequent surveys to lower division students. The names and telephone numbers of the upper division students who had not registered were provided to their departments with the suggestion that the departments contact those students to inquire about their plans. The surveys of lower division students provided more details on student satisfaction with and involvement in various facets of the social and academic programs.

Survey 2 focused on students who were registered in Spring 1996 but had not registered during pre-registration for Fall 1996. A sample of students who had registered for the following term (Fall 1996) was surveyed to provide a comparison group. Survey 3 involved students who were registered in Fall 1995 but not in Spring 1996.

Respondents to Surveys 2 and 3 were classified as belong to one of the following five groups:

1. respondents whom the registrar identified as registered
2. respondents who claimed they were registered but were not identified by the registrar as being registered
3. respondents who were not registered but planned to return to Virginia Tech in the Fall

4. respondents who did not plan to return in the Fall
5. respondents who were not in attendance in Spring 1996

Characteristics, Satisfaction, and Involvement

As noted earlier, respondents to Surveys 2 and 3 were classified as belong to one of five groups. As shown in Table 1, there were significant differences among these groups on both their QCA and the percent with a QCA of 2.00 or greater (i.e., a QCA high enough to obtain their degree). Those whom the registrar identified as registered had an average QCA of 2.51 and 74% had a QCA of 2.00 or greater. Those who claim to have registered but who were on the registrar's list of non-registered students had an average QCA of 2.24 and 62% had a QCA of 2.00 or better. Those students who did not register and do not intend to return had an average QCA of 2.02 and 54% had a QCA of 2.00 or better. Those students who did not register but who plan to return in the Fall had an average QCA of 1.81 and 43% had a QCA of 2.00 or greater. Those students who did not attend Spring 1996 had an average QCA of 2.21 and 57% had a QCA of 2.00 or greater. Those students who register tend to be first year students (61%) while those students who do not register but plan to return tend to be second year or older students (34% first year). These and other relevant characteristics of the five groups are shown in Table 1.

[Table 1]

Those students who intended to return Fall Semester were asked why they did not register and how they intended to register. Approximately one fourth (24%) indicated that they missed the registration deadline and an additional 8% were too busy. Three percent intended to use drop/add procedures while the remaining 65% provided other reasons such as owing library or parking fines.

A check of the enrollment status of these students in Fall 1996 revealed that they essentially did what they said they were going to do. Over 90% of those who had registered attended Fall term, 86% of those who said they were registered attended, and 75% of those who said they had not registered but intended to return did so. Only 7%of those who did not intend to return did so while 18% of those who did not attend Spring term returned for Fall term.

Students who registered were not significantly different on race and sex from those who were not at Virginia Tech in Spring 1996. However, they were more likely to be female (48% vs. 30%) or minority (10% vs. 5%) than were those who did not register for Fall 1996. Those who

registered came to Virginia Tech with slightly better high school rank (18th percentile vs. 22nd percentile) and better high school grade point average (3.43 vs. 3.34) but no difference in SAT scores (498 vs.500 verbal and 572 vs. 570 math) than the average of those who did not register and those who were not here. While at Virginia Tech, they were more likely to live in the dorms (83% vs. 73%). There were no differences between in-state and out-of-state students (55% vs. 61% registered). There were no differences by college, nor were there differences by first year student or more experienced student.

Those students who did not register had less financial support from their parents (59% vs. 71% receiving most of their support from parents) and more support from loans (31% vs. 20% received most of their support from loans). Also 44% of those who are not planning to return and 49% of those who are registered to return received grants or scholarships with 5% and 8% receiving most of their support from this source.

Satisfaction: Those students who registered had a much greater feeling of acceptance at Virginia Tech than those who did not or were not here. As shown in Table 2, they were also much more satisfied with the faculty in all of its facets, and the advisors and advice that they received than those who were not registered who, in turn, were more satisfied than those who were not here. Satisfaction with the ability to get the classes wanted seemed to be related to the length of time they were at Tech. Those who registered for Fall 1996 were less satisfied than were those who did not register who were less satisfied than those who were not here. There was no difference in satisfaction with the administration, classes, living facilities or student services. Overall, the students were most satisfied with their development of skills to deal with a variety of people and with the overall quality of class instruction.

[Insert Table 2]

Involvement: The information in Table 3 indicates that there were several major differences in frequency of activities and involvement of students while at Tech. Those who registered were more likely to say that they were active in student organizations, managed their time well, attended class and completed assignments, made close and supportive friendships, had gotten to know students with similar interests, had made appoints with and talked to faculty, and had gotten to know faculty outside of class. They reported that they had gone to tutorial sessions for a particular subject, had used the computer or internet for career information, and had talked to other students about career and to people in various careers about what their jobs are like.

Those students who were not at Tech during Spring 1996 were less likely to have made close and supportive friendships and to have gotten to know students with similar interests than those who were not registered.

[Insert Table 3]

Table 1

Averages for Five Groups

	Register Verified	Register Not Verif	Not Regist Plan Retrn	Not Register Not Returning	Not Here Spring 1995
Number	220	133	119	173	155
% Female	48	41	36	30	51
% White	90	83	79	95	91
% In State	76	83	84	81	76
% Honors	7	6	0	8	5
% in Dorms	83	68	50	72	75
% First Year	61	49	34	64	57
% Transfer	3	11	11	4	6
% 21 or older	11	20	40	16	15
Ave HS %tile	18	26	26	22	22
Ave HS GPA	3.43	3.24	3.18	3.34	3.32
Ave SAT Verbal	498	479	493	500	500
Ave SAT Math	572	563	572	582	558
Ave Crd Att(thru 95)	25	26	33	23	26
Ave Crdt Pass	24	24	26	20	23
Ave QCA	2.51	2.22	1.80	2.02	2.21
% QCA>=2.0	76	62	43	54	57
% here Fall 1996	92	86	75	7	18

(note: %tile=100*(class rank)/(class size))

Table 2

Percent Dissatisfied with Facets of Virginia Tech

	Registrd	Not Regist	Not Here	Diff(NR-Ave)	
Advisor Respect	8%	20%	27%	15.5%	
Faculty Interest in You	4%	16%	23%	15.5%	
Career Advice Faculty	6%	19%	18%	12.5%	
Advice on Major	8%	15%	25%	12.0%	
Advisor Curricula	11%	17%	20%	8.5%	
Skills to Deal with People	0%	5%	10%	7.5%	
Living Facilities	4%	9%	13%	7.0%	
Acceptance by Others	1%	8%	7%	6.5%	
Learning to Think	2%	8%	8%	6.0%	
Administrative Staff	5%	10%	12%	6.0%	
Faculty Course Info	5%	9%	13%	6.0%	
Faculty	3%	7%	10%	5.5%	
Class Instruction	2%	6%	9%	5.5%	
Advisor Policy and Proc	9%	12%	13%	3.5%	
Faculty Accessibility	7%	9%	11%	3.0%	
Student Services	4%	7%	6%	2.5%	
Find out about Grades	9%	11%	11%	2.0%	
Career Services	4%	5%	7%	2.0%	
Course Availability	37%	21%	16%	-18.5%	(a)

(Note: (a) this may be due to problems in obtaining classes for Fall 1996)

Table 3

Frequency of Participation and Involvement:

Percent Responding Frequently and Percent Responding Rarely or Never

	Registered		Not Regist		Not Here	
	Freq	Rare	Freq	Rare	Freq	Rare
Meet Faculty Outside of Class	21%	41%	10%	60%	8%	62%
Had Appointments with Faculty	39%	12%	25%	29%	22%	28%
Talked about what Jobs are Like	22%	30%	18%	43%	19%	45%
Active in Student Organizations	33%	35%	17%	55%	20%	42%
Used Computer for Career Info	42%	32%	27%	47%	34%	41%
Attended Tutorial Sessions	31%	20%	23%	33%	22%	31%
Met Students with Similar Interests	76%	3%	57%	12%	48%	14%
Talked about Career Interests	50%	10%	38%	20%	34%	18%
Made Close Friendships	85%	1%	65%	8%	59%	12%
Attend Class & Complete Assign	85%	1%	69%	6%	73%	8%
Managed Time Well	45%	13%	36%	19%	51%	17%
Active in Other Organizations	8%	72%	9%	73%	12%	70%
Attend Programs on Studying Skills	8%	69%	8%	73%	13%	63%
Sought Help for Personal Problems	4%	78%	4%	72%	9%	71%

APPENDIX B

Student Success Projects

ACADEMIC UNIT	PROJECT DIRECTORS	PROJECT DESCRIPTION
Center for Academic Enrichment and Excellence	Delores Scott	Develop personalized intervention plans for minority students at risk. Enhances academic performance through advising, faculty involvement, parental involvement and periodic evaluation.
Center for Academic Enrichment and Excellence	Ronald Giddings	For selected subjects, provide peer-based assistance in the residence halls and computerized assistance to undergraduate students using Eudora.
Center for Academic Enrichment and Excellence	Amelia Clark	Expand Project Success and its self-assessment and goal setting methods by training additional facilitators. Train and prepare faculty and Student Affairs professionals to conduct seminars.
Center for Academic Enrichment and Excellence	Lynn Sponaugle, Charlotte Amenkhienan, Delores Scott	Provide a Residential Study Skills Program offering evening workshops led by Graduate Assistants. Promote the concept of establishing a learning community in the selected residence halls.
College of Agriculture & Life Sciences	William Camp, Leon Geyer, & C. M. Wood	Identify the academic needs of CALS students, examine the effects of a CALS faculty coaching program for general chemistry, and provide a peer-teaching program in agricultural economics.
College of Arts & Sciences	Ellie Sturgis	Provide a series of interventions and special advising to all Arts & Sciences majors who fail to meet eligibility requirements. Provide training workshop on proactive faculty advising.
Biology Department	Joe Cowles	Establish small group discussion sessions for BIO 1015 students at risk. Provide a faculty member to teach a 1015 trailer section.
Biology Department	Joe Cowles & George Simmons	Establish team advising for Biology majors. Recruit additional advisors through the Advising Network.
Chemistry Department	J. W. Viers & P. G. Amateis	Use senior level undergraduates as recitation leaders to provide more individualized attention to help students achieve greater success in Chemistry 1035.
Family and Child Development	M. Benson, A. Stremmel, J. Sawyers, J. Reissen, R. Blieszner	Provide workshop training for faculty to teach a course for high-risk students focusing on motivation and study skills.
Fisheries & Wildlife Sciences and Forestry & Wildlife Resources	Brian Murphy & David Smith	Develop an experiential introductory course for natural science majors to improve student performance and University attachment emphasizing critical professional skills (e.g., reading, speaking, writing, teamworking).
Forestry & Wildlife Resources	John Seiler, Jay Sullivan & Roy Kirkpatrick	Develop predictive models of success/failure using early class performance. Provides active intervention for students identified as likely to fall below new eligibility requirements.
Mathematics Department	Robert Olin	Provide 7 pilot sections of calculus linked with the Emerging Scholars Program. Provides a two hour small group problem session monitored by professors and advanced undergraduate tutors.
Minority Engineering Program	Bevlee Watford	Provide a 5 week summer bridge program for Black students to aid in the transition from high school to college focusing on chemistry, mathematics, and computer skills as well as tools for academic and professional success.
Minority Engineering Program	Bevlee Watford	Provide Academic Excellence Workshops for specific sections of Introduction to Engineering Fundamentals (EF 1005) based on the Treisman model of collaborative learning.
Physics Department	Dale Long & Leo Piilonen	Provide a pilot section of PHYSICS 2175 focusing on background concepts & standard topics using lecture, demonstrations, discussion, a www site, and supplemental instruction.
University Honors and Society of African American Scholars	Harry Abernathy, Charisa Morris & Jack Dudley	Provide small course-specific study groups led by honors and SAAS students to help group members work on course related material and develop skills for student success in general.

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