

# A CASE STUDY OF UNDERGRADUATE CURRICULAR REFORM IN A COLLEGE OF AGRICULTURE

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*“Change is a demanding subject - difficult to envision,  
frightening to orchestrate,  
and essential to the progress of any organization.”  
Dr. Albert C. Yates, 1994.*

## Introduction

Curricular reform is an ongoing process in most Colleges of Agriculture. In any given year, numerous individual faculty, departments, and college committees engage in curricular reform efforts; however, significant curricular reform at the college level occurs much less frequently (often only once a decade at best). Such curricular reform efforts typically occur as a result of a change in administration, budgetary cutbacks, or because of externally induced pressures from university administration, state legislatures, or boards of regents. When these efforts do occur, it is essential that they break out of the mold of elaboration of what exists into the realm of innovation and strategic thinking.

Given the importance and outcomes associated with college curricular reform activities, there is surprisingly little literature on case study analysis of individual institutions. An appraisal of the processes and outcomes has seldom been done or reported in the literature. In fact, an amazing number or major portions of proposals for curricular reform have been placed on shelves to gather dust through the years! Implementation of the major recommendations is seldom accomplished.

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This paper contains a case study analysis of undergraduate curricular reform for the College of Agriculture at the University of Florida.

## *Strategic Planning and Curricular Reform*

Curricular reform at a college level is very similar to strategic planning for a company or business. When a company embarks on developing a strategic plan, it is responding to a perceived need and its objective is to position itself such that it gains a competitive edge. In the strategic planning process, the company designs and implements what it perceives to be the best way to accomplish this objective. The perceived need for strategic planning may result from a number of things such as loss of market share, a desire to increase market share, or change of company administration.

When a college decides to consider curricular reform, it also is responding to a perceived need. In this case, it might include declining enrollment (loss of market share), feedback from potential employers, major budget reductions,

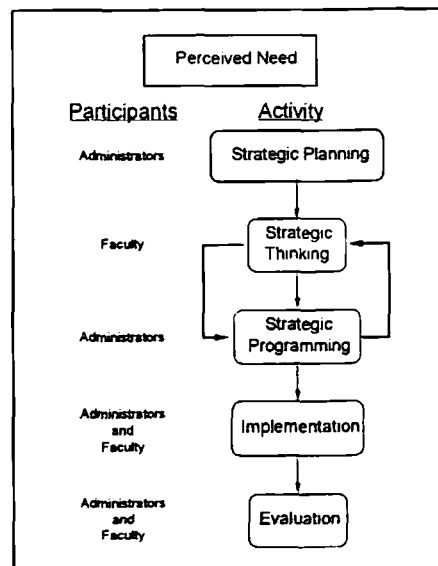


Figure 1. Strategic planning process.

or change of administration. It is felt that through curricular reform, the product produced (students educated) will be more competitive thus improving the desirability of the programs offered.

Both processes go through examination of the current situation; identifying the opportunities and threats, the strengths and weaknesses; creative thinking and idea generation, design of a strategic plan, and implementation of the plan. Done properly, strategic planning offers many benefits, including examination of alternative strategies, viewing the situation with both a short and long run point of view, and consideration of resource allocation (Aaker, 1992). The danger is that both may bog down because of a failure to recognize that "strategic planning isn't strategic thinking" (Mintzberg, 1994). It is far too easy to fall into the pitfall of breaking down the goal into achievable steps without undertaking the strategic thinking necessary to synthesize and innovate in order to accomplish true curricular reform. Mintzberg also states that the strategic thinking process should be separated from the strategic planning process, in part because the "most successful strategies are visions, not plans."

Deans and other administrators are good at working within the system. They look at the big picture and have the ability to provide the structure for the plan and to implement it. What they usually lack is the ability to be creative, to have a vision, to be able to take off the blinders. Far too often, they fall into the trap of being hampered by thinking that an idea *can't* be done. They need assistance with the strategic thinking that will result in significant restructuring of a curriculum.

Carefully selected faculty, on the other hand, can be ideal in the strategic thinking. They have insight into the problem from being closer to the day to day operation and they bring the creative thinking that can grow out of scientific research. It is imperative, however, to use prudence when selecting the individuals to address the problem for some of them also believe that things *can't* be done. They need to be willing to spend the time and effort to collect information from all possible sources and to synthesize it while recommending strategic ideas for curricular reform.

Once the strategic thinking process has been completed, it is time for the administrators to analyze the strategic ideas and/or recommendations to accomplish the vision and to determine and develop the strategic plan that will be implemented. At this point administrators will have to make some of the tough decisions of how resources will be allocated, what is politically feasible and what is not, and what may have to wait for another round of changes.

The implementation step must be carried out by administrators in conjunction with the support and cooperation of the faculty. It is in this area that far too frequently proposals for curricular reform come to a stand still. One reason is that, at this point, administrators do not have the time to oversee the implementation process and it is highly unlikely that a committee can accomplish the task. It is necessary to have an individual or two whose job it is to coordinate and facilitate the change and who have time to pay attention to the detail.

The remainder of this paper represent a case study in carrying out all these steps at the University of Florida.

## Case Study of the Process

### *Strategic Thinking Process*

In the fall of 1991, the Dean of the College of Agriculture (COA) formed three faculty task forces to examine the undergraduate, graduate, and off-campus instructional programs in the College. These task forces were charged to review the curricula and to suggest changes to enhance the quality, quantity and efficiency of delivery of the College's academic programs. In the fall of 1992, the State Board of Regents conducted two external program reviews. These reviews covered all academic programs in the COA except Agricultural Engineering and Agricultural Education and Communication. These programs are covered in state reviews of Engineering and Education curricula.

Task force membership included representation from a wide array of COA programs. Faculty and administrators were contacted via mail to solicit input and faculty forums were held. Task force draft reports were sent to faculty, department chairs, research and education center directors, and undergraduate and graduate curriculum committees for review and reactions. After all of these data were assembled and final reports were published. The finalized task force reports were sent to the Dean of the College of Agriculture for implementation.

In each task force report, the current situation was described, issues and concerns were identified, a vision for the future was formulated, and recommendations were made to enhance academic programs within the COA. These visions and recommendations provided the strategic thinking for the change process. Ample opportunity was provided for faculty, staff, administrator, and student input.

These processes legitimized the strategic thinking dimension of the change process. The task force reports served as the "think tank" to generate ideas and recommendations for making improvements in academic programs. The task force reports and the BOR Reviews constituted the strategic thinking process.

The Task Force on Undergraduate Curricula Development studied all aspects of the COA undergraduate programs. Data were gathered, through surveys and open forums, from individuals and groups impacted by the undergraduate programs. These groups included students, alumni, employers, faculty, and administrators. The task force members reviewed the data were and made recommendations for strengthening the undergraduate experience. General recommendations were made in the areas of mission and goals; majors, minors, and certificate programs; student recruitment; student placement; admission, progression, and graduation standards; non-traditional and minority student issues; service course offerings; student advising and counseling; post-baccalaureate programs; computer information retrieval skills development; faculty recognition, development, and responsibilities; and internationalization of the undergraduate curriculum.

### *Strategic Programming Process*

One of the most common complaints about faculty committees and task forces is that they spend much time and effort formulating recommendations and publishing documents that then sit on the bookshelf with little, if any, attempt to put the recommendations into practice. As we thought about this, we were reminded of a quote by Joel Baker. He said, "vision without action is merely a dream,

action without vision just passes the time, vision with action can change the world.” The preceding section provided the vision for curriculum reform. This section of the article discusses strategic planning to implement the vision.

Once the task force reports were finalized and sent to the Dean of the College of Agriculture, immediate steps were put into place to develop a process for implementing the recommendations of the task force reports and the BOR Reviews. This was done to identify a strategic plan that would be used to implement the changes recommended by the task forces and the recommendations of the BOR Reviews. Two faculty members were hired on a half-time basis as Acting Assistant Deans for Special Undergraduate and Graduate Programs. They were responsible for reviewing the strategic plan, making modifications in the plan and then overseeing the actual process of implementation. The revised strategic plan was provided to faculty, administrators, and task force members for their review and suggestions. Their comments and reactions were solicited and modifications were incorporated into the plan. This document provided the strategic programming phase for the curricula reform project and this provided the basis for implementing changes.

Every recommendation made by the task forces and the BOR Reviews was addressed in the strategic plan. In most cases, a specific process was suggested for implementing the recommendations. In some cases, because of budget restrictions or other extraneous factors, the recommendations were not adopted. In those cases, the rationale for not adopting the recommendations was made. In a few instances, the COA did not agree with a specific

recommendation and indicated that the recommendation would not be implemented and provided the rationale for not implementing the recommendation.

The strategic plan assigned specific recommendations for implementation to the COA, the Undergraduate Curriculum Committee, the Academic Development Committee, additional ad hoc committees, and individual academic units within the COA for implementation.

#### *Implementation*

The implementation team for the curricular reform were the Dean, Assistant Deans for Academic Programs and the a faculty member serving as Acting Assistant Dean of Special Undergraduate Programs. At the beginning of the process, this team met with the department chair, undergraduate and graduate coordinators of each major, as well as the advisors who worked with the students. At this meeting the implementation plan was explained and they were charged to undertake a systematic and comprehensive review of their undergraduate curriculum. Specifically, they were asked to determine whether all present options or tracks offered by the major were necessary, whether the appropriate courses were required, whether the course numbers and titles were consistent and whether content of courses needed revising.

As a part of this review, they were asked to complete a skills matrix for each option or track (Table 1). The department needed to identify the course(s) where each skill would be learned. This matrix served as a focal point for several of the tasks undertaken as part of the curriculum reform. It was expected that in many cases the basic skill would be learned only at the lowest level of cognition;

however, during the latter part of the program, it was anticipated that students would move into the synthesis/integration level of cognition. Several majors found the curricula weak in the latter level and either new courses were developed for the major or existing courses were modified to include more synthesis and integration.

be admitted to a college by the time they reached 80 credit hours. After 1993, students were required to be admitted to a college by 60 credit hours. To facilitate this process and to provide students with feedback on the probability of successful admission to an upper division college, the University developed a system called Monitoring Academic Program Policy (MAPP) and "mapped" their progress at specific points in their academic careers. The implications of this policy for the College of Agriculture are that each major must have specific standards for admission to the college and progression standards that will be used when students are "mapped." For each major, optimal admission standards were developed along with the associated progression standards. Development of this process was made more difficult because of the large number of transfer students from the community colleges. In particular, some of the courses that should be taken while a student is lower division are not available. Because of these difficulties acceptable deficiencies also had to be developed.

Basic Skills	Levels of Cognition		
	Basic Knowledge	Integration	Synthesis/Integration
Communication Oral Written			
Computer Application			
Interpersonal Skills			
Ethics			
International			
Economic Literacy			
Leadership Development			
Safety and Health			
Environmental Impact			
Technical Courses			
Capstone Experience			

Table 1. Skills Matrix

Assessment of Admission/Progression/Graduation Standards

As universities throughout the United States have become more crowded, they have struggled with the problem of moving students through the system as efficiently as possible. At the University of Florida, students are admitted either as lower division students within the College of Liberal Arts and Sciences or they transfer from a community college or other four-year institutions. Until 1993, all students had to

Students who receive a B.S. from the COA are required to earn 128 credit hours. Each program was reviewed to ascertain that it was possible for a student to complete the required courses within the 128 credit hour limit. Curricula were also forced to prepare lower division sequences such that community colleges could provide the necessary preparation of students.

The COA has an ongoing program of developing "2+2" programs with the community colleges. These programs work within the available courses at the community college and specify the sequence of courses necessary to guarantee community college transfer students

admission into the COA. These programs also guarantee that a student can graduate in four years if the proper sequence of courses are successfully completed.

#### College Revisions

The COA historically required all students to have a core set of courses. Over the years this core had been modified to meet the needs of specific majors. As a result, the Catalog was filled with footnotes of exceptions and it was apparent that there were a large number of majors not taking all the core courses. There were also some majors that wanted to make some additional changes.

Considerable discussion and debate among the undergraduate coordinators of the different majors took place with regard to what should be required at the college level. This debate included everything from no core or required knowledge base to everything identical. Part of the debate centered around having students sufficiently prepared to take upper division courses. One thing that became apparent was that department were going to have to be very explicit about prerequisites whereas in the past the assumption was that they would have the college core.

Another part of the debate really focused on a more philosophical issue. Some majors as a result of design, and as a result of external requirements by licensing boards, wanted students to take only courses that were directly applicable to their desired profession. Others felt that students getting a university degree must be, first and foremost, educated individuals and that they should have the broadest education possible. This issue was harder to resolve than the first. In the end, the college decided that all

students would be required to have minimum mathematical background of precalculus; a biology principles course plus lab; a physical sciences course, either chemistry or physics; two courses in communications, one written and one oral; and one course in economics, preferably microeconomics.

The college core requirements were decided after all majors had been reviewed and revised. This should have been decided at the beginning since several curricula underwent additional modifications.

#### Service Courses

Each academic unit was asked to review all courses to determine to see if they were suitable for general education. A number of courses were found to be good general education courses and the University was requested to list them as such. Several departments, however, determined that their courses would in fact satisfy one of the general education requirements; however, they elected not to have the courses classified as general education courses. The rationale for this decision was that the demand for the courses were already greater than the department's ability. To have them listed as general education courses would, in effect, limit the number of COA students that would be able to enroll in them. The feeling of the faculty in these departments was that they would rather provide service to COA students before providing for the University as a whole.

#### Evaluation of Special Programs

The COA offered a number of certificates of study. These had evolved during a period when the University did not allow minors. There were a number of students that

desired to take courses in a particular area and wanted the recognition of having completed a coherent program of study. After the University changed its policy, the certificates stayed on the books but had very limited use.

Committees to study each of the certificate programs were formed. Although almost unanimously each committee recommended that the certificates be abolished, new minors were developed to replace them.

### Minors

One of the major outgrowths of this curricular reform was the development of several new minors. Several departments took advantage of the time spent considering the courses they were offering as well as the students who demanded them. They realized that there was a demand for their courses beyond students majoring in that area.

In addition, the Certificate in Humanities in Agriculture was revised to be a minor in Agricultural and Natural Resources Ethics. This minor is offered in conjunction with the College of Liberal Arts and Sciences. This minor is designed to enhance the degree programs two groups of students. Students in agricultural and resource related disciplines may augment their technical courses with courses in liberal arts and sciences. Students in business, humanities, journalism or social sciences may strengthen their programs with courses that pertain to agricultural and natural resources issues and problems.

Another specialized minor was in the area of Management and Sales in Agribusiness. This minor was designed to provide students with a basic understanding and skill level of sales and management techniques in agribusiness. This minor provides students in technical

agriculture with a sufficient background in agribusiness to prepare them for entry level management positions in production agriculture. Another market for this minor is for students in the College of Business Administration's new bachelor of arts program. This new program provides students with the core knowledge from business administration and then requires the students to earn a specialization in another field. This minor is ideal to satisfy the specialization requirement.

### Merging of Majors

One recommendation of the Board of Regents review was to eliminate majors that had less than a sufficient number of students. These majors included agronomy, plant science, plant pathology, dairy science and poultry science. It was decided that these majors would be merged with related majors under two new majors. Agronomy, plant science, plant pathology and parts of entomology were merged into a new major called plant sciences. Dairy science and poultry science were merged with animal science and a new animal sciences major was developed.

The initial reaction of faculty in the affected departments was that there was no way that they could design curricula within the time frame designated. After the expected resistance, they created well-designed and innovative curricula. The result for the animal sciences major was that they revamped the way a few of the core courses were taught. For example, rather than have a course in dairy nutrition, one in poultry nutrition and one in swine nutrition, they developed a course in animal nutrition and used different labs to discuss the specific requirements of a species. The faculty felt that the programs designed were

stronger than they may have created if they had not had to merge the majors.

In the plant sciences major, there was more reluctance to give up all existing programs. Part of this may have been the result of the number of departments involved and part of it may have been because of the existing differences between the curricula.

#### Development of Interdisciplinary Majors

One area in which there was considerable interest, both in terms of demand by students and in terms of desire by faculty and the administration was Human Resource Development. A committee of faculty from Home Economics, Food and Resource Economics, 4-H and Youth Programs, Agricultural Education and Communication, and Sociology designed a major (IS-HRD) that would prepare students for a career in community, family, youth, and human resources. A difficulty that arose was that the University could not create a new major at will. The University offers an interdisciplinary studies major and the COA was successful in introducing two programs under that major. During the first year over 90 students were admitted to the IS-HRD major, indicating that in fact there was considerable pent up demand.

The administration of COA had been receiving feedback from industry that it needed students with a broad background in environmental management. They needed graduates with a broad educational background who were capable of working with public agencies in matters concerning all the new environmental regulations. Some public agencies expressed a need for graduates with an understanding of the field of agriculture to work in the

environmental management area. A committee from Agricultural Operations Management, Soil and Water Science and Food and Resource Economics worked to design an interdisciplinary major in this area and this major is being offered under the University's interdisciplinary studies major as well.

Both the merged majors and the interdisciplinary majors are being supervised by advisors in the departments involved with the design of them. A downside of the interdisciplinary studies majors is that students do not truly have an academic "home" and there is the risk that they will miss some of the social interaction enjoyed by students with a major affiliated with a department. The faculty are aware of it and have encouraged students to become involved in activities at the college level or within one of the departments as well as with College's interdisciplinary clubs and the HRD Club.

#### Mission Statement

One of the recommendations made by the task forces was that the College needed to develop a mission statement. The difficulty was to develop a statement that was not trivial and yet was concise. One of the task forces had suggest a statements and it was used as a starting point. This was circulated among the faculty and administrators for comments and feedback. The statement finally used was presented to the faculty at a meeting, revised and approved.

#### Catalog Revision

The final task in the curricular reform was to revise the College section within the *University Catalog*. Because of the extensive changes, it was decided that the complete section would be revised and it would be checked for



consistency with the rest of the University. The College Undergraduate Curriculum Committee took the leadership on this task; however, the Acting Assistant Dean for Special Programs was responsible for integrating information for all the departments. Because of the variability in the majors offered, each major was required to list general education requirement, lower division requirements and upper division requirements. All majors were required to adopt the same terminology. For example, each discipline of study became a major and under that title there could be one or more specializations. Determination of the taxonomy that would be used turned out to be difficult. Some of the licensing bodies have specific uses for some of the terminology and that prohibited some choices.

### Conclusions

Curricular change is an incremental and on-going process. Major college curricular reform, however, only occurs occasionally and usually in response to a perceived need. In order to accomplish the reform, it is essential for the faculty and administration to interact as the college goes through the strategic thinking and planning process. Administrators usually lack the ideas, or vision, to accomplish true reform and they need the input of faculty. In general, standing committees do not work well in providing the necessary insight. This case study used a task force approach with specific changes. Advantages of this approach are that the task force is given a charge and thus has the focus that is essential for the job. The task force knows what needs to be done and the time frame in which it needs to be accomplished. It is critical, however, that the

membership of the task force be selected carefully and that there be no faculty who are "blockers" assigned to the committee. Once the task force has examined the situation and made recommendations, the process can bog down unless the administration is prepared to take the recommendations seriously, to finalize a strategic plan, and to implement it. To facilitate the implementation process, a faculty member was assigned the task of serving as liaison between the departments and the administration. Again, having a single individual responsible for the detail necessary for implementation provided the focus to accomplish the reform in a timely fashion.

The last step of strategic planning and curricular reform is to evaluate the changes that have been made. Sufficient time has not lapsed for this to take place. It is anticipated that the College of Agriculture will conduct an evaluation in a couple of years to determine the effectiveness of the reform and to identify refinements that will need to be made.

Several things were learned from this process. First, strategic thinking should be assigned to a faculty task force with a specific charge. The task force provides a vision statement for the future with specific recommendations. Then, administration should develop a strategic programming process that outlines what needs to be done to implement the task force recommendations to accomplish the vision. Then, a faculty member should be assigned to work with administrators, faculty, and academic units to implement the recommendations and cause changes to occur. Finally, evaluation should be done after the changes have been in

place for some period of time. These four steps are essential for effective curricular reform. Furthermore, the entire process must be interactive and dynamic. Faculty, administrators, students and other must be consulted, informed and involved throughout the process to legitimize the changes.

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