Tyler suggests two screens for reducing objectives to a manageable number. One is the philosophy of the institution. Certain things, explicitly or implicitly, are taken to be acceptable/desirable concerns; others, however desirable in a broad sense, may not be considered within the domaine of the specific institution or segment of it. The second screen involves what is known about how learning occurs (the psychology of learning). For example, there are some useful guides as to how much time a learner requires to reach a specified level of proficiency in a given field. It is known to take longer to develop a comprehension of an idea than to simply memorize materials related to it. It takes longer to be prepared to use an idea than merely to be able to demonstrate a comprehension of it, etc. Another example: learning is facilitated if the learner has clues as to the relationship between the material he is studying and his notion of what he is preparing to do (to become).

The second question of the rationale asks what learning experiences will be provided. Some of the same ideas useful in the screen on how learning occurs provide leads as to the type of learning experiences that will most likely facilitate the required learning. Inquiries into learning experiences focus on the notion that learning occurs from the activities carried on by the learner (what he gives his attention and efforts to). Consequently the question becomes: what will the learner be doing (since that's what his learning will result from), rather than simply what will the teacher do.

The third question asks how the learning experiences will be organized. Three criteria guide inquiry related to this question:

1. Continuity – how to provide for the learner's continuing use, in a progressively expanded, elaborated and increasingly comprehensive manner, of the basic ideas and skills to be learned.

2. Sequence – how experiences to be arranged will provide for the learner's acquiring an initially useful notion of basic ideas and skills and how each experience builds on those that precede. Usually this can best be accomplished through a series of sequenced experiences throughout the duration of the course of study.

3. Integration – how experiences are to be provided to facilitate the learner's dealing with the inter-relationships that exist between the ideas he works with in one discipline or field of study as compared to the others. This criterion relates especially to the use to be made of the central ideas as he later attempts to deal with problems of the "real world."

Tyler's fourth question concerns evaluation – the assessment of the consequences of efforts to facilitate learning. Typically three broad ideas are involved:

1. How to provide useful clues (feedback) to the learner as to how well he's doing, where he's having difficulties, successes, etc.

2. How to provide feedback to the teacher (the facilitator) as to how well he's doing – where difficulties are arising, which students can move on, which ones need more attention, etc.

3. How to arrive at a judgment as to the level of performance of the learner – has he reached a level that can be considered of sufficient merit to signal advancement, excellence, etc.

Conclusion

Current circumstances require that comprehensive and systematic effort be directed at improving curricula for students studying agriculture at university level. Much effort to date at designing curricula in agriculture has been directed to adjusting the form (structure). Little attention has been given to what I'm calling the substance of curriculum. This tendency, I'm suggesting, accounts for the fact that one institution shifts from its existing form of curriculum structure to another, while an institution in another locality is shifting in almost the exactly opposite direction, each disenchanted with what it has. Each searching for the ideal.

The experience with massive curricula efforts, supported by government especially during the 1960's, suggests something missing. At least the consequences of these efforts have been less than overwhelmingly successful.[4] Many of the efforts have been extremely disappointing. Excellent materials have been prepared (content for curriculum). These materials simply are not being used. Why? Can it be that those who are to implement curricular revision (the individual teacher) must be involved in the entire process; that his understanding of what it's all about must accompany any useful and substantive change?

I'm proposing that the critical questions that should be directing inquiry which could provide the basis for more intelligent decisions on curriculum design/development are being overlooked. I'm maintaining that we as teachers (faculty members) are victims of our own experiences. We have not developed sufficient sensitivity to our own learning behavior as a basis for better judging what would be most helpful and useful to our students. We have most generally never been alerted to the fact that perhaps substantial insights into how learning occurs can be gained by carefully and systematically monitoring our own learning experiences.

The Faculty of Agriculture, University College, Dublin is engaged in a five year effort, half way into its second year at this writing. It is a comprehensive effort. It is systematic. We have a strategy which provides an operational basis for the effort and a rationale which provides a conceptual basis. I dare say that many members of this faculty would hardly believe the kind of questions they are now asking themselves that they had not previously considered.

Changes have already been made. More will come. The ultimate product will not be perfect. But all those in the faculty who have engaged themselves in the effort (and that's just about everybody) will have some basis for comprehending what changes have occurred and how these changes can be continually monitored, adjusted and readjusted. We are convinced that the potentials for such an undertaking will justify all the effort, the frustrations and the unavoidable disappointments that are bound to come in this effort of "learning our way through" to a more useful curriculum for the students.

REFERENCES

[1]G. L. Carter, Jr., is Professor of Agricultural and Extension Education, the University of Wisconsin, and currently on leave of absence as a Visiting Professor, University College, Dublin, where he is serving as Director of the Kellogg Agricultural Extension Centre and director of the project described in this article.

[2]This project is being supported by a grant from the W. K. Kellogg Foundation, Battle Creek, Michigan.

[3]Ralph W. Tyler, Basic Principles of Curriculum and Instruction (Chicago: University of Chicago Press, 1949).

[4]For Example, see Herman T. Epstein, A Strategy for Education (New York: Oxford University Press, 1970), pp. 1-5; Fletcher G. Watson, "The SSCS: A Curriculum Study", Curriculum Theory Network, Monograph Supplement, CTN 7-1971, pp. 135-140; Francis S. Chase, "Educational Research and Development in the Sixties", Ibid, pp. 142-163.

COLLEAGUE AIDED EVALUATION (CAE) AS AN EXPERIMENT IN IMPROVED TEACHING

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Students have been suggested as the most logical and reasonable evaluators of our professional teaching process and course-curriculum direction. A. H. Harrington, nominee for the Ensminger-Interstate Outstanding Teacher Award, recently stated:

> ... I woke up to the idea that teaching is more fitting of subject matter to the use of the student than a forcing of the student into the mold of the subject matter.

Another nominee for the same award, William J. Flocker, suggests that the teacher has three interdependent functions to

perform: first, motivation of the student; second, provision of a stimulating environment for this motivated student; and third, presentation of the relevant bodies of information to the students. Both of these teachers stress that instruction should be directed toward the student. Therefore, it is consistent to maintain that those students are the most logical examiners of our teaching product.

It is perfectly acceptable to me that effectiveness of instruction should be measured by the student, both as to the course content and direction, and as to instructor competence and presentation. At the same time, it is an established fact that professional evaluation by administrators and colleagues can and has become part of the professional award system. This is as it should be! However, it appears to me that combining these evaluators (student and colleague) in one experience can offer significant improvements in the concept of instruction evaluation. This combination can be attained by a process of Colleague Aided Evaluation (referred to as CAE). The purpose of this paper is to present the concept of Colleague Aided Evaluation and specify some of the potential and realized benefits of this tool.

Colleague Aided Evaluation
Colleague Aided Evaluation was designed to be a supplement to our traditional course evaluation endeavors.[1] The traditional student evaluation forms supposedly have always asked the correct questions, properly stated, and scientifically weighted. However, the "circle the number" or "mark the appropriate space with the soft lead pencil only" often have appeared "cold" and impersonal to the students and as a result, have encouraged nominal student involvement and resulted in cursory answering. Even if such polished techniques as the Illinois Course Evaluation Questionnaire can provide a check on careless or disinterested student's response, and throw them out, the fact remains that a chance to evaluate the course with active student involvement has been lost. Students must be allowed to gain and actively participate in course evaluation if we as instructors expect their full involvement. The answer offered by this paper is the use of CAE at approximately mid-semester. CAE consists of a colleague of the course instructor coming into the classroom without prior warning, asking the instructor to leave, and then evaluating the instructor's performance and course direction by direct discussion with the class. Then, in an informal session, the colleague and instructor will go over the notes, previous dialogue, etc., at the soonest possible opportunity. The use of the colleague as the interviewer rather than the instructor himself, makes possible student anonymity, and should increase the openness and usefulness of such dialogue and the resultant notes.

Potential Benefits
Although the mechanics of CAE may vary, expected benefits can be identified. The primary benefit of this evaluation is improved instruction for the student and most importantly, immediately (in this present term). By discussing the instruction informally in a student-colleague environment at mid-term any specific problem areas of mannerisms, content inconsistencies, techniques of delivery, etc., can be identified somewhat earlier in the course. Elimination of such problems through the rest of the semester might well "save" a course for many of the students presently enrolled. As well as allowing the students themselves to benefit from their own evaluation of the course, and not only other later students, CAE should generate more involvement in the course itself by allowing any frustrations, real or imagined, to be openly stated at a time when some benefit (student and instructor) might be realized.

The use of CAE may well cover blind spots in the traditional end-of-course evaluation. In particular, it could be expected that the traditional evaluation would be heavily weighted by circumstances occurring in the last one-half of the course just as the informal CAE is weighted in favor of the first one-half.

Another expected characteristic of CAE is that the colleague evaluator should generate more student activism than the "sheet with spaces to mark." The chance, and responsibility, to personally state their feelings should cause students to be more active, more logical, and more complete in evaluation.

In addition, the use of a colleague allows the particular problems of each unique classroom society to be examined. The colleague, although armed with a specific question framework, can flow with the dialogue of the student evaluators, thus identifying bothersome items particular to "society characteristics" of that individual class, i.e., a textbook that is too complicated to aid in understanding the lectures.

Finally, it is expected that the results of the CAE can be compared with the traditional course evaluation at the end of the term. Since CAE is being suggested only as a supplement to end-of-term written course evaluation, the instructor can evaluate himself as to improvement and progress over the term, something we instructors too seldom bother to do.

Application of CAE
Colleague Aided Evaluation was tested this semester by a departmental colleague and myself, on a reciprocal basis. The colleague was asked to enter in, unannounced, and take over the class for the last 20-30 minutes of a class period. During that time the colleague then briefly stated why he was there, and that the discussion was to be totally informal with reported comments to be completely anonymous. He then asked general questions to initiate and guide the discussion, noting both positive and negative reactions as the conversation proceeded, but allowing the students to pursue their own areas of interest. Some items covered in this CAE trial run were class presentation, subject coverage and direction, reliance on text, examinations, delivery technique, mannerisms. Upon finishing the period he (colleague) and I (instructor) then thoroughly dissected his notes in a half hour period. Not only were his notes covered, but a de-briefing situation was utilized where I, as the instructor, asked him about specific questions which the prior class environment and my personal feelings indicated might be problem areas.

I also visited my colleague's class serving as his colleague evaluator, utilizing the same mechanical format described above. In this case we also briefly discussed, prior to the CAE, certain technical points of instruction and course mechanics that the instructor felt might be troubling the students. This pre-evaluating preparation resulted in the second de-briefing session being more complete and useful. Although we conducted this CAE test on a reciprocal basis, other combinations of colleague-instructors could be utilized, e.g., chairman-faculty, faculty-faculty, etc.

Results of Experiment
The brief test, on a reciprocal basis, of Colleague Aided Evaluation produced most of the expected benefits outlined above. First, the instructors of these two courses were immediately aware of several characterized weaknesses from the students viewpoint. For example, being conscious (as a result of CAE) of a habit of disorganized blackboard usage should help improve my class presentation by forcing a more systematic approach to use of the blackboard. And, most importantly, the presently enrolled students themselves stand to immediately benefit from their own evaluations of the course.

In both evaluation experiments students added to the question framework posed by the colleague. This, as expected, allowed a more personal, in-depth treatment of the items of particular relevance to each particular course interview. The students, when prompted by a question, were often stimulated to cover a problem that was only slightly related to the given question, but was of significant importance to that class society.

In both instances, the colleague was able to generate a significant degree of student activism. The students did openly discuss the merits of the instructor and course with each other (and the colleague) as the evaluation proceeded. Thus, a new learning experience via the discussion process was offered to the student. On various points the discussants found themselves in disagreement, but were able to arrive, with the colleague's guidance, at a concensus of evaluation. As this discussion (and accompanying

student involvement) progressed, the colleague, while identifying the concensus, also noted the entire spectrum of positive and negative remarks if they appeared potentially useful for the later debriefing session.

A previously unexpected benefit of the use of CAE was that students are treated as individuals and not simply part of a numerical array. The traditional course evaluation via formal questionnaire presents an upset or frustrated student as a number, a situation that does little to help the instructor or the student. The informal verbal discussion of the CAE did allow all students to speak out in the manner they wished. Then, the class discussion of these points helped to point out to both the students and instructor where improvements could be made by each person. This should result in a more thoughtful and analytical approach by the student to the formal course evaluation at the end of the semester.

One final, and unexpected point, was that after the use of CAE the students seemed to understand that, as instructors, we were making a deliberate attempt to improve our teaching. CAE is or should be an entirely voluntary process. In formal questionnaire evaluation the student evidently feels that the computer or calculator will do the grading work and the instructor will simply passively "read" the results. However, in the CAE process, the instructor is "leaving himself wide open", an overt voluntary commitment based on active instructor interest and concern that appeared to generate accompanying student interest and concern.

Final Thoughts

Colleague Aided Evaluation calls for a personal, active involvement by the instructor in the process of course evaluation. This commitment, as well as the immediate benefits available to the present students, generates student involvement on an educational level. The colleague, who can approach the course evaluation informally, yet professionally, can help maintain the evaluation at that level.

Finally, CAE I perceive it to be, will be best used in conjunction with a formal course evaluation in the traditional post-course sequence. The informality of CAE when used as a supplement to formal course evaluation is an appealing and productive attribute. However, without the rigor of a formal course evaluation, this informality and early timing of evaluation, might negate the total information gathering and total instruction improvement sought in all forms of course-curriculum evaluation.

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[1] These have commonly taken the appearance of formal, straightforward computer questionnaires; some of these are totally objective in approach and others do provide spaces and intrastructure in an attempt to generate written subjective analyses.

EFFECTIVE WRITING: AG ALUMNI SAY IT'S ESSENTIAL!

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Introduction

Often, instructors in the College of Agriculture experience difficulties as they attempt to convince students that writing effectively is important. Too frequently students believe that once outside the college classroom, they will not need to write. They therefore take little heed of skills taught in required writing courses, resent writing assignments given in agriculture classes, and fail to enroll in technical writing courses available to them. Sensing students' disregard of writing skills, instructors increase attempts to convince them that the ability to write effectively is essential to success in many agricultural careers. But we lack specific information to support this generalization, and we therefore frequently fail to motivate students to improve writing skills.

In August of 1971 the English Counseling Service of the University of Illinois College of Agriculture surveyed graduates' use of writing skills in agricultural careers. A five page questionnaire was mailed to 660 graduates of the College of Agriculture randomly selected from a list of all graduates from 1923 to 1968. The specific purpose of the study was to ascertain kinds of writing tasks College of Agriculture graduates regularly engage in, the number of hours they devote to writing during an average work week, the value of writing experiences offered in U. of I. courses, and other information useful in motivating students to improve writing skills. Also, the information was sought for use in developing communications curricula for agricultural students.

Forty-four percent of the questionnaires mailed were completed and returned. Questionnaires not completed can be accounted for, in part, by the fact that addresses were in some cases incorrect. several of the recent graduates were overseas on military assignments, and older graduates were retired and therefore decided the questionnaire was not applicable for them. Graduates no longer working in agriculturally related careers also considered the questionnaire not applicable. Still others were deceased.

Findings

The 292 graduates responding to the questionnaire ranged in age from 25 to 72, an average age of 44. Thirty-nine percent of those responding were in professional or technical positions, 38 percent in managerial or official positions, and 17 percent in farming. The remaining 6 percent included craftsmen, housewives, and non-farm laborers. Forty percent were employed by private agencies, 34 percent by governmental agencies, and 21 percent self-employed. Most of those self-employed were farmers.

Respondents were asked, "Do you think the ability to write well is important to persons entering your profession?" Ninety-five percent of those responding to the questionnaire answered "yes." The 5 percent (N=15) who answered "no" included 9 self-employed farmers. 4 persons in managerial positions, 1 craftsman, and 1 non-farm laborer.

Respondents were also asked to indicate the amount of time they spend writing each week. Twenty-four percent indicated that they spend an average of 1 to 2 hours each week writing, and an additional 23 percent spend 3 to 5 hours each week. Another 20 percent spend 6 to 10 hours writing in an average week, 11 percent spend 11 to 15 hours, and 13 percent spend over 16 hours per week. Only 9 percent indicated they do no writing at all. A breakdown of these groups by occupation and employer indicates that 54 percent of those persons who spend 16 hours or more of each week writing are in managerial positions whereas the overwhelming majority (21 out of 26 or 81 percent) of those who do no writing in an average week are in nonmanagerial positions.

Respondents indicated that their writing tasks are varied. Business letters, documented reports, plans of work, and inter-office memoranda require the most time of the greatest portion of the respondents. Other writing tasks include monthly reports, advertisements, technical reports, budget reports, speeches, newsreleases and other journalistic writing, legal documents and miscellaneous reports. Thirty-three percent of the respondents