

Assessment of Curricular Competency Outcomes

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This paper describes assessment initiatives to: (i) identify outcomes addressed in all courses of a new entry-level Doctor of Pharmacy program; and (ii) ascertain students' perceptions of progress toward educational outcomes. During the four years after the implementation of a new curriculum, course coordinators identified competencies and supporting competencies addressed in their courses as well as the extent of coverage. Students assessed their command of competencies and supporting competencies annually during the same time frame. Results included: (i) identification of content duplication and omissions; and (ii) no significant differences in student self-assessments by class for each curricular year. With the addition of these surveys, we have established an assessment program that includes faculty members' judgments of their contribution to curricular content and students' appraisals of learning.

INTRODUCTION

The Virginia Commonwealth University (VCU) School of Pharmacy began a four-year entry level Doctor of Pharmacy Program in the fall of 1995. The curriculum for this program was predominantly based on desired outcomes developed by the American Association of Colleges of Pharmacy (ACPE) Center for the Advancement of Pharmaceutical Education (CAPE) Advisory Panel on Educational Outcomes in 1994(1). When the new professional degree program began, the Assessment Committee reviewed the School's existing assessment activities and concluded that the on-going assessment program needed to be augmented. First, we needed to ensure that all desired curricular outcomes were being addressed and that no outcomes were unnecessarily duplicated. Second, we needed to examine the new curriculum from a student perspective.

The Committee developed a two-part assessment strategy that would support the following goals: (i) to monitor curriculum content by identifying educational outcomes addressed in all courses; and (ii) to ascertain students' perceptions of personal progress toward mastery of the School's educational outcome objectives. These goals were addressed over a four-year period using two different survey tools. The outcomes assessed by this process included attitudes and skills, as well as knowledge. Although a large amount of data were generated, the curricular assessment was designed to meet programmatic needs, not to test hypotheses. The purpose of this paper is to present a summary of the results and lessons learned during the course of the curricular assessment.

METHODS

Two instruments were used to collect assessment data. The faculty instrument was used after the conclusion of each new year of the didactic curriculum. The entire student body completed the student survey on an annual basis.

Faculty Assessment of Course Coverage of Competencies
The faculty instrument consisted of a list of 12 desired competencies or outcomes and 288 supporting or enabling outcomes approved by the faculty for the new four-year professional

degree program. This list of 300 items was derived from the 1994 report of the CAPE Advisory Panel on Educational Outcomes(1), edited by the curriculum redesign task force, and approved by the faculty. Appendix A contains a sample of two of the competencies and their supporting outcomes (a copy of the complete set of competencies and supporting outcomes is available upon request from the corresponding author). Space was provided to the left of each outcome and enabling outcome in which course coordinators were asked to record the extent of coverage or extent to which each outcome was addressed in his or her courses. For example, a faculty member may have indicated that the material was included in a four-hour lecture sequence, or was covered in multiple case study exercises during the semester. Other possible types of responses included the nature of testing or evaluation used to determine if the student had mastered the competency. Because of the large amount of overlap among the supporting outcomes for competencies 8, 9, and 10, these three competency statements were combined into a single grouping during the design of the new curriculum. Thus, while there are 12 competency statements, only 10 sets of supporting outcomes are reported.

All faculty members who coordinated courses for pharmacy students, including those from the School of Medicine, were asked to participate in the course assessment process. Because of the burdensome nature of the instrument, surveys were completed only for the first offering of each required course in the didactic portion of the curriculum. A single copy of the survey was placed in the mailbox of each course coordinator; replacement copies were furnished upon request. Frequent reminders to complete the survey were made at department and school faculty meetings; stragglers received individual encouragement. All first-year course coordinators were asked to identify outcomes and the extent of outcome coverage in their courses at the end of the spring semester 1996. At the end of the spring semester in 1997, all second-

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Table I. Student self-assessment data collection Times

Survey administration	Time of data collection	N
At matriculation	First week of classes, fall semester, first year (1995-98)	4
End of first year	Last two weeks of classes, spring semester (1996-99)	4
End of second year	Last two weeks of classes, spring semester (1997-99)	3
End of third year	Last two weeks of classes, spring semester (1998-99)	2
End of fourth year	"On Campus Day" (April 13, 1999)	1

year course coordinators were asked to indicate the same information for their courses. Likewise, at the end of the spring semester in 1998, all third-year course coordinators were asked to identify the outcomes and extent of coverage in their courses. Clerkship preceptors were not asked to supply information on the outcomes and extent of coverage for their rotations. Over 250 practitioners participate in our clerkship program, providing a wide variety of learning experiences. Because of the diversity of clerkship sites and the variability of patient experiences within individual sites, we opted to focus on only the didactic portion of the curriculum.

The data from the faculty surveys were compiled for each academic year of the curriculum and analyzed by curricular year. A simple count of the number of times a supporting competency is reported to be addressed by each course coordinator was entered into an Excel 97 (Microsoft, Inc., Redmond, WA) spreadsheet for each of the three years of didactic instruction. The percentage of supporting outcomes addressed within each year of the curriculum was determined for all competencies. A cumulative percentage for the supporting competencies was also tabulated at the end of each year of the didactic curriculum. Special reports, involving details of requested supporting outcomes were also produced on an ad hoc basis. The results of the assessments were presented to the Assessment Committee, Curriculum Committee, and faculty. In addition, the raw data tabulations for the number of times a supporting objective was covered within a year were provided to the Curriculum Committee for planning and evaluation purposes.

Student Self Assessment Survey

The student instrument is a simplified variation of the faculty survey. This instrument contains a list of the 12 desired competencies or outcomes and only 55 supporting or enabling outcomes (see Appendix B). It was felt that the instrument designed for faculty use was too onerous to allow for the multiple measurements planned for the students. Asking students to react only to the 12 competency statements was felt to be too broad an approach. What if a student felt that he/she could perform some of the activities listed in the competency statements, but not others? How should he or she respond? As a result, each competency statement was broken down into the "least measurable unit" so that students could respond specifically to the various components of the competency. Students recorded their perceived competence level for each enabling outcome by filling in the appropriate bubble on a scantron sheet using a ten-point scale ranging from "I do not understand what the listed statement means or I do not feel able to perform the listed function at all" to "I feel able to perform the listed

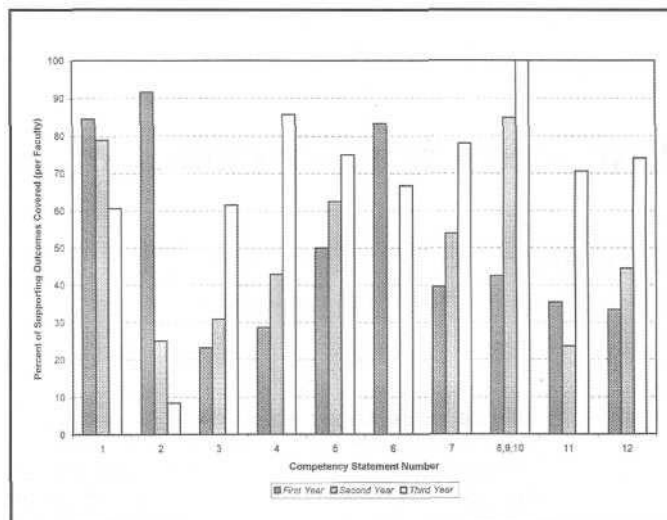


Fig. 1. Faculty assessments of coverage of competencies by year.

function with a high degree of competency all of the time.”

Student self-assessment data were collected by class at one sitting for each class. The survey data were collected on five occasions as described in Table I. Each student's responses and identification number were scanned into a text file at the VCU Academic Computing Center. The file for each class was then converted into an Excel 97 spreadsheet (Microsoft, Inc., Redmond, WA) and cleaned up. Ambiguous or missing responses were clarified by looking at the original scantron sheet. Unresolved responses were changed to blanks, which were dropped from the analysis.

The students' self-assessment data were analyzed by class and year. The median value for all responses for questions 1 through 4 provided the median value for competency 1. Because the faculty assessment survey combines the supporting outcomes for competencies 8, 9, and 10, the summaries of the students' assessments for these competencies were grouped in a similar manner. That is, the median value for the responses to questions 22 through 41 were used as the median score for competencies 8, 9, and 10. Median scores were graphed by class for all survey administration times. Special reports, involving details of requested supporting outcomes were also produced on an ad hoc basis. The results of the assessments were presented to the Assessment Committee, Curriculum Committee, and faculty.

RESULTS

Faculty Assessment of Course Coverage of Competencies

Survey results were received for all but three courses for the first year of the curriculum (anatomy, medicinal chemistry, and pharmacy practicum II). All course coordinators for the second year of the curriculum completed the faculty instrument. Data for several courses (drug literature evaluation I and II, physical assessment, pharmacy law, and disease state management IV) are missing from the third year summary. All told, we received responses for 34 of the 42 (81.0 percent) required courses in the didactic portion of the curriculum.

The results for the faculty assessment of coverage of supporting outcomes within each competency statement can be found in Figure 1. Our curriculum includes an introduction to pharmacy law unit during the fall of the first year as well as a more in depth three-credit pharmacy law course during the third year. Coverage by the latter course is not included in this

Table II. Supporting outcomes most frequently covered in didactic curriculum (top five selections by frequency)

Number Of courses	CS	SC	Supporting competency statement
16	1	5a	Discuss the characteristics of drug-drug, drug-food, drug-lab, and drug-disease interactions.
15	1	1d	Identify patient data that are pertinent to evaluating a drug order or prescription
13	7	1g	Use common medical terminology and abbreviations correctly.
12	1	1b	List the indications for commonly prescribed drugs.
12	1	1c	Use appropriate resources to identify the indications for a prescribed drug.
12	1	1g	Discuss patient and disease factors that influence drug selection (e.g., allergy, disease state, or medication history).
12	1	3a	List patient characteristics that may influence the choice of alternative drug products.
11	1	2a	For commonly prescribed drugs, state the drug's usual dose, dosage forms, routes of administration, and frequencies of administration.
11	1	2b	Use pertinent references to determine the appropriateness of a dose, dosage form, route of administration or frequency of administration uncommonly prescribed drugs and when patient characteristics modification of standard practice.
11	1	5b	Discuss the impact of individual patient characteristics on common types of drug-drug, drug-food, drug-lab and drug-disease interactions.
11	8	36a	Determine those patient and laboratory parameters which measure the achievement of desired therapeutic outcomes.
11	11	1	Use pertinent references to determine the appropriateness of a dose, dosage form, route of administration or frequency of administration for commonly prescribed drugs when patient characteristics require modification of standard practice.

NOTE: CS=competency statement number, SC=supporting competency statement number.

Table III. Supporting outcomes not reported to be covered in didactic curriculum

CS	SC	Supporting competency statement
3	1	Use a systematic problem solving process to make decisions about managing scientific and technological resources that maximize the provision of pharmaceutical care.
3	1c	Describe the steps in a systematic approach to solving problems about scientific and technologic resources.
3	2a	Contrast the various system technologies employed in different practice settings.
7	4c	Explain an organized health care setting's policies and procedures pertaining to a pharmacist's writing orders, prescriptions, or progress notes.
7	10	Discriminate between the requestor's statement of perceived need and actual need in order to clarify a drug information request.
7	10a	Describe the types of data required by the pharmacist to clarify a drug information request.
7	11f	Determine situations where follow-up drug information is necessary.
7	11g	Justify the need to document responses to drug information requests.
7	13	Identify individuals who are abusing medications.
7	13b	Demonstrate the ability to locate a geographically close reference laboratory that can identify an unknown Drug substance.
7	15	Provide educational materials or activities for health care professionals and consumers on the prevention of substance abuses and chemical dependency.
11	15	Identify resources that help maintain the pharmacist's current awareness of regulatory requirements affecting the practice of pharmacy.
12	12	Compare and contrast the strengths of various professional associations for meeting specific professional objectives.
12	13	Discuss the benefits of membership in professional organizations.
12	14	Discuss the responsibility of professionals to belong to and participate in professional organizations.
12	15	Discuss ways of becoming involved in professional organizations.

NOTE: CS=competency statement number, SC=supporting competency statement number.

report, hence the pattern observed for competency statement 2. Despite full reporting for all courses in the second year of the curriculum, none of the courses included items from competency statement 6.

The data gathered from the course coordinators provided evidence that nearly every supporting outcome was covered during the three didactic years of the curriculum, even though three first-year and five third-year courses were not included in the faculty assessment. Some supporting outcomes were covered only once while others were covered in as many as 16 courses. Table II contains a listing of the most frequently cited

supporting competencies. The most commonly cited supporting outcome was, "Discuss the characteristics of drug-drug, drug-food, drug-lab, and drug-disease interactions." This was a particularly interesting finding, since our faculty frequently voices concern over the lack of coverage of drug interactions. With the exception of competency statements 2 (76.9 percent), 7 (90.4 percent), 11 (92.9 percent), and 12 (85.2 percent), faculty reported covering 100 percent of the supporting outcomes during the three years of the didactic curriculum. Table III displays the 16 of 300 (5.3 percent) supporting competencies that were not reported to have been covered by any course. Most

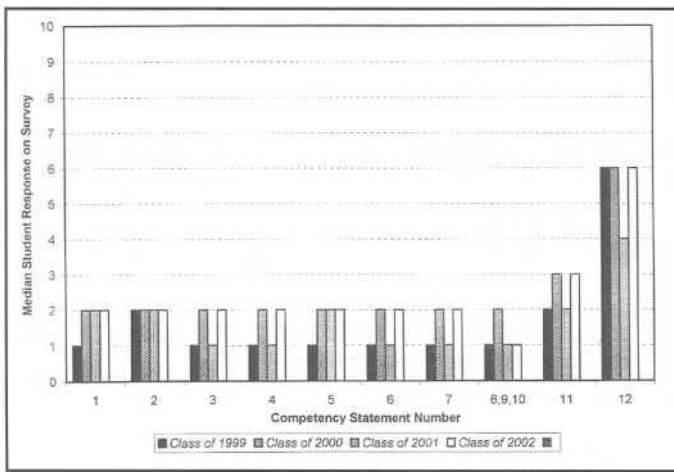


Fig. 2. Student assessments at matriculation.

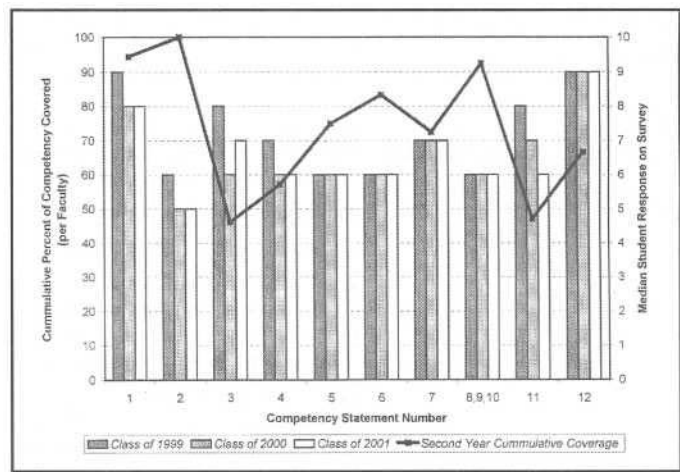


Fig. 4. Student and faculty assessments at the end of the second year.

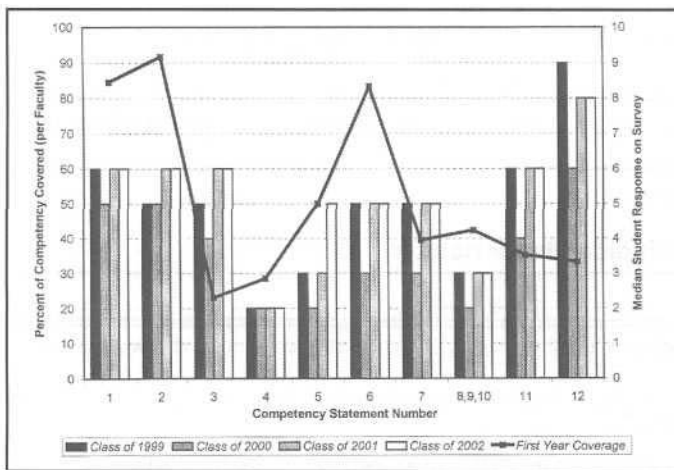


Fig. 3. Student and faculty assessments at the end of the first year.

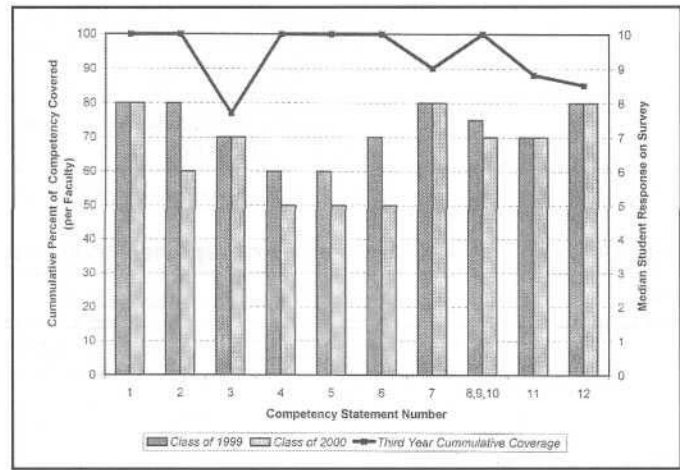


Fig. 5. Student and faculty assessments at the end of the third year.

of these supporting outcomes are likely to have been addressed by the missing course data, clerkship experiences, and/or participation in extracurricular professional activities. Thus, it is not unreasonable to assume that all 300 of the supporting outcomes were addressed at least once over the four years of the entry level Doctor of Pharmacy program.

Student Self Assessment Survey

With the exception of the end of the fourth year, the student surveys were administered during pre laboratory sessions for pharmacy skills laboratory, a required course in all three years of the didactic curriculum. Fourth year students on clerkship completed the survey during a required “on campus day” approximately one month before graduation. Eight of the 15 administrations had 100 percent response rates. The remaining seven sessions had response rates ranging from 81.9 percent to 99.0 percent (median 93.6 percent). Very few students failed to respond to all questions or recorded ambiguous responses during each administration of the survey. The most common type of ambiguous response was incomplete erasure of a previous answer when a student changed his or her mind.

The results of the student self-assessment surveys administered at matriculation can be found in Figure 2. The baseline values for the four classes enrolled in the new first professional degree Doctor of Pharmacy program were remarkably similar. The data from the student self-assessment surveys for each

year of the didactic portion of the curriculum are presented in Figures 3 through 5 (columns). Cumulative coverage data (lines), derived from the faculty surveys, are also included in the graphs. It was interesting to note the great similarities among the classes at the end of each year of the didactic curriculum. This occurred despite the constant tweaking of the new curriculum over time. Curricular adjustments included an overall reduction in the number of credit hours (which affected nearly every course), the relocation of content from one course to another, and changes in the manner in which material was presented. We would like to think that, despite these curricular alterations, the lack of change in the student assessments over the study years showed the robust nature of our instrument. We realize, however, that this lack of change might actually indicate a lack of sensitivity.

At the time the analysis was done, only one set of data was available for the final administration of the student survey. These data were combined with the values for the previous four administration times for the class of 1999 and are depicted in a single graph (see Figure 6). It appears that repetition and/or reinforcement of some competency areas led to higher levels of self-assessments of competence, especially during the first two years of the curriculum.

DISCUSSION

To the best of our knowledge, this is the first published com-

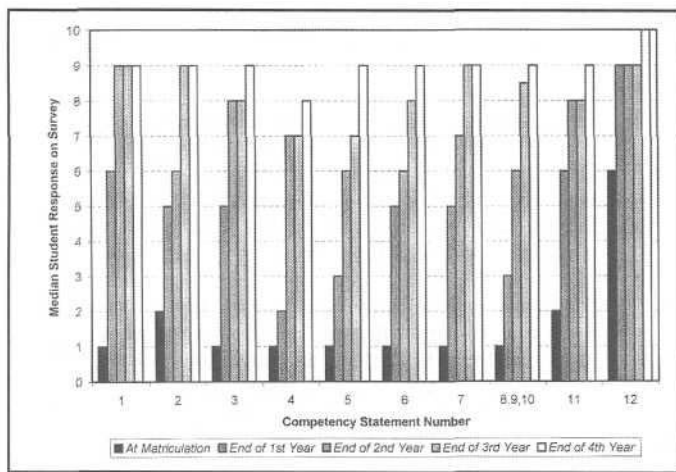


Fig. 6. Complete series of students' self assessments for the class of 1999.

parison of faculty reports of curricular content coverage with students' perception of content mastery. In assessing content in an entry level doctor of pharmacy curriculum, Mort, Houglim and Kaatz (2) had faculty report competency coverage in their courses using a five-point scale to indicate the extent of coverage. At the time of their study, student assessments were under development.

The similar results for the four entering classes (Figure 2) is particularly interesting because the School changed the admissions procedure in the middle of this assessment. The first two classes were admitted under a process where no interviews were performed. The new admissions procedure, which includes faculty and practitioner/student interviews, began with the class of 2001. We had thought students accepted under the new procedure would assess some competencies, especially the ones concerned with communication skills, higher than students accepted under the previous admissions procedure had. This was not the case for the classes of 2001 and 2002. We were pleased by the high level of professionalism professed by all students at matriculation (competency 12). This finding was not expected, but it is not surprising. Students entering Pharmacy School often cite a desire to help others as a motivating factor in their career choice. The students make progress in this area during the first year of the curriculum, despite its heavy basic science content, and maintain their commitment to professionalism throughout the didactic curriculum.

Comparison of the student and faculty data in Figures 3 through 6 suggest there was some disagreement between what faculty members reported was covered in their courses and what the students felt they could do. The discrepancies between content coverage and student self-reported competence may reveal possible areas of deficiency. For example, faculty rated coverage of competency #6, an ability to apply knowledge of health care systems and systems of practice for provision of appropriate pharmaceutical care, higher than students assessed their competence in this area. The lower student rating could reflect a lack of hands-on experience to "apply knowledge," confusion with the terminology used in the competency statement versus terminology used by the professor, or a true lack of competence.

Gains during the second half of the curriculum were more modest, especially during the fourth (clerkship) year. Since our data represents self-reports from one class only, we will need to wait until more classes have graduated before we will

know if this is a definite trend. It is quite possible that a majority of students on clerkship began to appreciate what they know but also realized how much they still have to learn. In identifying their own knowledge gaps, these students may have assessed their competence gains as being smaller than they really were.

As the Assessment Committee was finishing the analysis presented here, the Curriculum Committee began a review of the Doctor of Pharmacy program curriculum with the goal of revising the existing program to better meet the educational needs of a generalist pharmacy practitioner. A generalist practitioner was defined to be "a pharmacist who exhibits the requisite knowledge, skills, attitudes, and behaviors necessary to promote wellness and assure safe, effective delivery and use of medications in patients who display the prevalent characteristics of common acute and chronic disease states." Content in each required course was reviewed during this process. Information obtained from the faculty competency coverage reports significantly informed the curriculum revision process, enabling the Curriculum Committee to identify areas of duplication and omission in the current curriculum. In addition, the students' self-assessments revealed how they perceived their mastery of the competencies the faculty had established as desirable outcomes. These data provided evidence that some duplicate coverage can be advantageous. As a result of the curriculum review and Assessment Committee findings, major changes were proposed and are being implemented for our professional degree program. Table IV contains a summary of four such needs with specific examples of how the assessment study results were used to make curricular revisions.

The faculty and student assessment data also provided an unexpected benefit. Approximately one year after the analysis was completed, the faculty began work on a self-study report for a fall 2001 ACPE reaccreditation site visit. The information from the analyses described in this paper provided a substantial contribution to the self-study report chapter on curriculum. Since the faculty and student surveys are an ongoing part of the VCU School of Pharmacy's assessment process, we anticipate that the data from the intervening years will contribute to the future self-study reports.

We have learned from our mistakes and have drafted a second generation of the survey instruments, to be used in conjunction with the curriculum revisions that went into effect in the fall of 2000 (a copy of the revised survey is available upon request from the corresponding author). Faculty and students now use the same survey, and the number of student responses has been decreased from ten to five. In addition, response 1 ("I do not understand what the listed statement means or I do not feel able to perform the listed function at all") has been split into two statements; this should allow for more discrimination at the lower end of the scale. Faculty also have five response options that correspond more closely with the students' responses (see Table V). Both the student and faculty responses are recorded on scantron sheets, which allows for the creation of a flat file that can be read into an Excel spreadsheet for analysis.

Since the new survey includes 130 statements, each class is divided into two groups, and each group asked to respond to 65 items. Given our class sizes, this results in approximately 50 complete responses per class. The 130-statement instrument is a vast improvement over the original 300-item faculty survey; we are hopeful that we will be able to achieve a 100 percent response with the new instrument. Another school of

Table IV. Impact of assessments on the revision of the curriculum

Need	How the assessment informed the need	Example	Outcome
Reduce duplication of content across courses	Content duplication was identified by our study of the curriculum content and individual course reviews.	Medical terminology covered in 13 courses.	Medical terminology was eliminated as a major component of the Skills Lab 1 course, thus allowing a reduction in total Skills Lab time over the curriculum. This reduction has helped create time for elective courses during the third professional year.
Lack of integration between basic science information and disease state management course content.	Content duplication was identified by our study of the curriculum content and individual course reviews.	Faculty in disease state management reported repeating basic science topics such as pharmacology and pathophysiology when introducing new content.	Pharmacology, medicinal chemistry, and new courses in pharmacotherapy will be offered during the second professional year to facilitate an integration of the courses content. This scheduling should provide more basic science and pharmacotherapy supporting the retention of information for both. Pharmacotherapy topics that are not addressed in pharmacotherapy or medicinal chemistry will be presented during the fall semester of the third professional year.
Large discrepancy between content coverage of pharmacy administration topics and students' perception of competence.	Students in all four classes who participated in the self-assessment study consistently rated themselves low in pharmacy administration competence.	Even though all competency content is covered in our current curriculum and much of the content is presented using cases to demonstrate relevance of the content to pharmacy practice, students did not report feeling able to perform the competencies with a high degree of competence.	Two pharmacy administration courses will be combined into a four and one-half credit course offered in the fall of the second professional year. To assist students in learning this content, the Curriculum Committee thought that students would give this new course content more attention with an increase in the number of credit hours assigned to the course. In the current curriculum, second-semester students have directed most of their study time to disease state management, not only because of their interest in the content but also because the course content was presented using methods unfamiliar to most students that required extra preparation time. In addition, students were willing to devote more time because the course was a four-hour course.
Lack of ethics discussion across the curriculum.	In the current curriculum, ethics is a prerequisite course and ethical dilemmas are supposed to be incorporated across multiple courses. The study of curriculum content coverage revealed that this was not occurring.	Competencies dealing with ethical decision making, such as document ethical decisions that lead to actions that may conflict with legal requirement, only appeared on the content surveys for two course coordinators.	The Curriculum Committee proposed the development of a two-hour ethics course for third-year students.

Table V. Faculty response options

Response	Description
A	Based on the coverage provided in MY course, I would expect a student to know nothing about this competency.
B	Based on the coverage provided in MY course, I would expect a student to have heard of the concept/skill/attitude.
C	Based on the coverage provided in MY course, I would expect a student to be able to demonstrate the knowledge, skill or attitude with help.
D	Based on the coverage provided in MY course, I would expect a student to be able to demonstrate the knowledge, skill or attitude with minimal help.
E	Based on the coverage provided in MY course, I would expect a student to be able to demonstrate the knowledge, skill or attitude independently with a high degree of competence/accuracy.

pharmacy has decided to use the new survey. As a result, we will soon have comparative data from two different programs.

Limitations

This evaluation has several limitations, many of which deal with the faculty survey. The greatest limitation was the missing data for eight courses. Four of the courses not included (drug literature evaluation I and II, physical assessment, and disease state management IV) are considered critical core courses in the curriculum. Another limitation was not having

competency coverage information from clerkship preceptors. It would be instructive to know which of the competencies selected by pharmacy school faculty and professional organizations as being essential to pharmacy practice are actually being used in daily practice. The dynamic nature of curricula in general, and the curriculum at our school in particular, also poses a challenge to the interpretation of the results. The fact that faculty and students used different instruments made it difficult to make direct comparisons between the two groups. Finally, the sheer volume of data generated by the surveys

proved to be almost overwhelming. We tried several different approaches before we were able to develop a means of summarizing the data that was easily understood by others outside the Assessment Committee.

CONCLUSION

The inclusion of the student and faculty assessments described here allowed us to achieve our primary goal of identifying specific curricular needs. The information derived from the assessment data also provided documentation for the curriculum chapter in our accreditation self-study report. With the addition of these surveys, the VCU School of Pharmacy has established an assessment program that seeks to consider faculty members' judgments of their contribution to curricular content and students' appraisals of learning. We plan to continue the ongoing process of assessing our program and using the findings for continuous curricular improvement.

References

- (1) American Association of Colleges of Pharmacy, "CAPE Educational Outcomes," Alexandria VA(1994).
- (2) Mort, J.R., Houglum, J.E. and Kaatz, B., "Use of outcomes in the development of an entry level PharmD curriculum," *Am. J. Pharm. Educ.*, **59**, 327-333(1995).

APPENDIX A. EXAMPLES OF COMPETENCY STATEMENTS AND SUPPORTING COMPETENCY STATEMENTS

CS	SC	Supporting Competency Statement
5	0	Apply technological advancements to pharmacy practice.
5	1	Demonstrate ability to use at least one patient information inventory and dispensing program <i>e.g.</i> , dispensing software program).
5	2	Convey information to consumers or health care professionals using effective oral communication skills.
5	3	Select appropriate nonverbal aids (including computer assisted instruction) to enhance verbal communication.
5	4	Use word processing software to prepare written communications for health care consumers and professionals.
5	5	Use a systematic problem-solving process to make decisions about managing human, economic, scientific, and technological resources that maximize the provision of pharmaceutical care.
5	6	Use spread sheet and data base software for making decisions about managing resources.
5	7	Identify scientific and technologic resources that may be used to assist in providing pharmaceutical care.
6	0	Apply knowledge of health care systems and systems of practice for provision of appropriate pharmaceutical care.
6	1	Use health care system information to project future economic and manpower needs for pharmacy practice.
6	2	Discuss and compare the components of the U.S. health care system with other health care systems.
6	3	Describe the role of pharmaceutical care within the health care system.
6	4	Identify the components of the U.S. health care system that have direct impact on the delivery of pharmaceutical care.
6	5	Describe the impact of specific components of the U. S. Health care system on the provision of pharmaceutical care.

NOTE: CS=competency statement number, SC=supporting competency statement number.

APPENDIX B.

Virginia Commonwealth University, School of Pharmacy *Self-Assessment of Progress Toward the Fulfillment of the Entry-Level PharmD Competency Statements*

Instructions: The twelve Virginia Commonwealth University School of Pharmacy entry-level PharmD competency statements are presented in bold italicized text. Beneath each competency statement is a break down of the components of the statement. Use a scale of 0 to 9 to describe your assessment of progress toward consistently performing the listed functions with a high degree of competency. Please be sure to respond to all 55 items!!

Scale	Assessment
1	I do not understand what the listed statement means or I do not feel able to perform the listed function at all
2	I feel somewhat able to perform the listed function some of the time
3	I feel somewhat able to perform the listed function most of the time
4	I feel somewhat able to perform the listed function all of the time
5	I feel able to perform the listed function some of the time
6	I feel able to perform the listed function most of the time
7	I feel able to perform the listed function all of the time
8	I feel able to perform the listed function with a high degree of competency some of the time
9	I feel able to perform the listed function with a high degree of competency most of the time
10	I feel able to perform the listed function with a high degree of competency all of the time

- I. Evaluate drug orders or prescriptions, accurately and safely compound drugs in appropriate dosage forms, evaluate manufactured drug products, and package and dispense dosage forms.**
 1. evaluate drug orders or prescriptions
 2. accurately and safely compound drugs in appropriate dosage forms
 3. evaluate manufactured drug products
 4. package and dispense dosage forms
- II. Apply legal principles pertaining to pharmacy.**
 5. apply legal principles pertaining to pharmacy
- III. Manage systems for storage, preparation, dispensing, and administration of dosage formulations.**
 6. manage systems for storage of dosage formulations
 7. manage systems for preparation of dosage formulations
 8. manage systems for dispensing of dosage formulations
 9. manage systems for administration of dosage formulations
- IV. Apply knowledge of personnel management, fiscal management, and pharmacoeconomics for efficient and effective operation of a practice system.**
 10. apply knowledge of personnel management for efficient and effective operation of a practice system
 11. apply knowledge of fiscal management for efficient and effective operation of a practice system
 12. apply knowledge of pharmacoeconomics for efficient and effective operation of a practice system
- V. Apply technological advancements to pharmacy practice.**
 13. apply technological advancements to pharmacy

practice

- VI. Apply knowledge of health care systems and systems of practice for provision of appropriate pharmaceutical care.**
14. apply knowledge of health care systems for provision of appropriate pharmaceutical care
 15. apply knowledge of systems of practice for provision of appropriate pharmaceutical care
- VII. Effectively collaborate, orally and in writing, with health care professionals, patients, and the public regarding rational drug therapy and the problems associated with the misuses and abuses of drugs.**
16. effectively collaborate orally with health care professionals regarding rational drug therapy and the problems associated with the misuses and abuses of drugs
 17. effectively collaborate in writing with health care professionals regarding rational drug therapy and the problems associated with the misuses and abuses of drugs
 18. effectively collaborate orally with patients regarding rational drug therapy and the problems associated with the misuses and abuses of drugs.
 19. effectively collaborate in writing with patients regarding rational drug therapy and the problems associated with the misuses and abuses of drugs
 20. effectively collaborate orally with the public regarding rational drug therapy and the problems associated with the misuses and abuses of drugs
 21. effectively collaborate in writing with the public regarding rational drug therapy and the problems associated with the misuses and abuses of drugs
- VIII. Design, implement, monitor, evaluate, and modify or recommend modifications in drug therapy to ensure effective, safe, and economical therapeutic plans.**
22. design drug therapy to ensure effective, safe, and economical therapeutic plans
 23. implement drug therapy to ensure effective, safe, and economical therapeutic plans
 24. monitor drug therapy to ensure effective, safe, and economical therapeutic plans
 25. evaluate drug therapy to ensure effective, safe, and economical therapeutic plans
 26. modify drug therapy to ensure effective, safe, and economical therapeutic plans
 27. recommend modifications in drug therapy to ensure effective, safe, and economical therapeutic plans
- IX. Provide a clinical judgement as to the continuing effectiveness of individualized therapeutic plans and intended therapeutic outcomes.**
28. provide a clinical judgement as to the continuing effectiveness of individualized therapeutic plans
 29. provide a clinical judgement as to intended therapeutic outcomes
- X. Recommend, counsel, and monitor patients' use of prescription drugs, nonprescription drugs, diagnostic agents, and non-drug therapy.**
30. recommend patients' use of prescription drugs
 31. counsel patients' use of prescription drugs
 32. monitor patients' use of prescription drugs
 33. recommend patients' use of nonprescription drugs
 34. counsel patients' use of nonprescription drugs
 35. monitor patients' use of nonprescription drugs
 36. recommend patients' use of diagnostic agents
 37. counsel patients' use of diagnostic agents
 38. monitor patients' use of diagnostic agents
 39. recommend patients' use of non-drug therapy
 40. counsel patients' use of non-drug therapy
 41. monitor patients' use of non-drug therapy
- XI. Retrieve, evaluate, and manage professional information and literature.**
42. retrieve professional information
 43. evaluate professional information
 44. manage professional information
 45. retrieve professional literature
 46. evaluate professional literature
 47. manage professional literature
- XII. Understand and commit to professionalism. This involves an ability to make appropriate ethical decisions; a commitment to voluntary practice standards and codes of ethics; a commitment to leadership involvement in community and professional affairs; and participation in health care policy formation and professional governance.**
48. understand professionalism
 49. commit to professionalism
 50. make appropriate ethical decisions
 51. commit to voluntary practice standards and codes of ethics
 52. commit to leadership involvement in community affairs
 53. commit to leadership involvement in professional affairs
 54. participate in health care policy formation
 55. participate in professional governance
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