

RESEARCH ARTICLES

The Role of Curriculum Committees in Pharmacy Education

Jean T. Carter, PhD, PharmD,^a JoLaine R. Draugalis, PhD,^b Susan P. Bruce, PharmD,^c and Michael R. Gonyeau, PharmD^d

^aSkaggs School of Pharmacy, University of Montana

^bCollege of Pharmacy, University of Oklahoma

^cCollege of Pharmacy, Northeast Ohio Medical University

^dSchool of Pharmacy, Northeastern University

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Objective. To conduct a follow-up survey of curriculum committee chairs in US colleges and schools of pharmacy to describe current committee structures and functions and determine whether changes have occurred over time.

Methods. A descriptive cross-sectional study design using a 30-item survey instrument regarding the structure, function, and charges of curriculum committees was sent to 100 curriculum committee chairs. Several new variables were added to the questionnaire to explore the use of systematic reviews, oversight of experiential education, and the impact of accreditation standards on work focus.

Results. Eighty-five chairs responded. Curriculum committees are on average 1 person larger, less likely to have a student vote, more likely to have formal charges, and more likely to be involved in implementing an outcomes-based curriculum compared with 1994. Committees have shifted their work focus from review of curricular content to curricular revision.

Conclusions. Curriculum committees continue to evolve as they respond to changes in pharmacy education and accreditation standards.

Keywords: curriculum committee, curriculum, pharmacy education, survey

INTRODUCTION

The landscape of pharmacy education has changed significantly since 1994, impacted by the transition from the bachelor of science in pharmacy degree to the doctor of pharmacy (PharmD) as the sole professional degree, the implementation of new accreditation standards, and expansion of experiential education. When colleges and schools of pharmacy could no longer offer the baccalaureate degree, their institutions were faced with the challenge of either converting the existing pharmacy curriculum to one appropriate for the PharmD degree or abandoning the existing curriculum and starting the process anew. Both options required significant manpower, coordination, and oversight from the institution's curriculum committee.

The Accreditation Council for Pharmacy Education (ACPE) has released updated accreditation standards for pharmacy education multiple times since 1994. The most substantial change in accreditation standards and subsequent effect on institutions occurred in 2007.¹ The

updated curricular standards included specific language related to the structure and duties of the curriculum committee at each institution as well as an increased emphasis on curricular assessment. The standards also included new language requiring that introductory pharmacy practice experiences (IPPEs) comprise at least 5% of the curriculum, which, for most colleges and schools, was a significant change that required substantial revisions to the institution's overall PharmD curriculum.

In 1994, the initial survey of curriculum committees in US schools and colleges of pharmacy was conducted by Carter and Draugalis.² The survey instrument was based on a medical education questionnaire³ and used to gather information about the academic pharmacy environment at the time. Pharmacy programs were gearing up for the conversion to an all-PharmD curriculum, with many colleges and schools juggling baccalaureate and multiple doctoral degree programs.² Sixty-six of 75 committee chairs at colleges of pharmacy completed and returned the survey instrument, which included questions about committee structure, function, committee impact, and barriers, as well as committee successes and failures.

Since that survey was conducted, 2 new revisions of accreditation standards have been published, with the

Corresponding Author: Jean T. Carter, Department of Pharmacy Practice, The University of Montana, 32 Campus Dr, Missoula, MT 59812-1522, Phone: (406) 243-5780. E-mail: jean.carter@umontana.edu

most recent one implemented in 2007. These new standards promote increased attention on assessment, describe specific curricular elements, and delineate requirements for IPPEs and advanced pharmacy practice experiences (APPEs).¹ Many new pharmacy programs have been created since 1994 and their use of curriculum committees has not been explored. There have not been any recent reports of pharmacy curriculum committees as determined by a search of the literature.

Qualitative data such as open-ended comments also were collected in the 1994 survey instrument. Their value in explaining responses and providing additional insight was better than expected. Such qualitative measures also were collected in the follow-up study to aid in interpreting quantitative data. The 1994 survey instrument was further refined and updated based on the 2007 accreditation standards as well as a review published by Bland and colleagues, which looked at the characteristics that make such committees effective in medical education. The 6 categories that may be the most influential in successful curricular change identified were leadership, human resource development, politics, evaluation, cooperative climate, and participation by organization members.⁴ The purpose of the current study was to gather information about the structure, function, and charges of curriculum committees in US schools and colleges of pharmacy and to evaluate changes that have occurred since the original inquiry in 1994.

METHODS

A 30-item questionnaire was created based on the instrument used in the 1994 survey. Several new items were added to explore the impact of the 2007 ACPE Standards for accreditation, the emergence of assessment committees, use of systematic reviews, and oversight of the experiential portion of the curriculum. Many of the items in the 1994 instrument were retained to allow for comparisons over time. These items covered committee structure, functions, membership, agenda topics, barriers to effectiveness, perceived impact of the committee, assessment activities, and greatest successes and failures. The questionnaire contained a combination of open-ended items and forced-choice formats. The descriptive, cross-sectional study design was approved by the respective campus institutional review boards of the 4 investigators.

A pretest of the survey instrument was conducted and final revisions and clarifications were made. In May 2008 an invitation to participate in the survey was e-mailed to the chair of the curriculum committee at every US college and school of pharmacy.⁵ Potential respondents were given the option of receiving an electronic copy of

the survey instrument by e-mail or a printed copy by US mail. Paper copies were sent with a business reply envelope but respondents could return the survey instrument by fax if they preferred. If no response was received, a follow-up e-mail was sent and phone calls made to ensure the correct person had been identified. Up to 3 reminder e-mails were sent to encourage potential responders to complete the questionnaire. Data collection occurred through July 2008. Descriptive statistics (eg, means, frequencies, percents) were used to portray the data for the 2008 population. Comparisons of ratings were made with 2-tailed *t* tests with a test-wise alpha set *a priori* at $p = 0.05$. Changes in percentages from 1994 to 2008 were used to identify emerging trends for variables measured in both the 1994 and 2008 survey instruments. For select variables, trends also were explored by looking at programs established after the original 1994 survey instrument. Descriptive statistics and *t* tests were conducted in Microsoft Excel 2007.

RESULTS

Of the 100 colleges and schools to which a request to participate was sent, 85 replied for a response rate of 85% (with 84 usable responses). The 15 schools that did not participate in the study did not appear to differ from those that did (Table 1).

Curriculum Oversight and Assessment Committees

Seventy percent of the programs organized their curriculum in traditional semester or quarter-long courses, 25% used a combination of traditional courses and blocks, and 3 used only blocks. Fifty-nine (70%) of the colleges and schools indicated that their curriculum committee was the only group that addressed curricular issues at their school. Of those colleges and schools with more than 1 group focused on curricular issues, 9 had committees or ad hoc groups that worked on specific curricular topics such as experiential programs, therapeutics, and pharmacy practice; 6 had department or division level curriculum committees; 3 had graduate programs that reported to the curriculum committee; 3 others had an assessment committee that provided input; 2 had ad hoc committees for curriculum revision that reported to the curriculum committee, and 2 indicated that management teams or the entire faculty worked on the curriculum. There were individual reports of curriculum work by semester teams, a continuing education department, and oversight of the curriculum committee by a council.

Ninety-two percent of the colleges and schools had assessment committees that were separate from their curriculum committee. Of those that did not already have

Table 1. Characteristics of US Colleges and Schools of Pharmacy ^{a,b}

Program Characteristic	All Colleges and Schools (N = 100)	Respondents Only (N = 85)
Public	60 (60)	52 (62)
Private	40 (40)	33 (39)
Years since established, mean (SD)	76.2 (52.7)	75.08 (51.8)
Schools established:		
<5 years	15 (15)	13 (15)
5-20years	14 (14)	12 (14)
21-50years	1 (1)	0
>50 years	70 (70)	60 (71)
2007 class size, Mean (SD)	126.6 (56.7)	128.8 (61)
Total enrollment (2008-2011 grads), mean (SD)	463.1 (298.1)	472.5 (324.5)
Prepharmacy/Professional Curriculum Split ^c		
2 prepharmacy/4 professional years	71 (71)	60 (71)
6 prepharmacy/professional combined	10 (10)	10 (12)
3 prepharmacy/4 professional years	5 (5)	5 (6)
BS degree/4 professional or 2 prepharmacy/5 professional	7 (7)	5 (6)
2 prepharmacy/3 professional (accelerated)	7 (7)	5 (6)
Missing	1 (1)	0

^a Source: AACP Pharmacy School Admission Requirements 2007-2008.⁶

^b There were no significant differences.

^c Totals exceed 100% due to multiple curriculum options at one program.

a separate assessment committee, 5 had plans to either create such a committee or appoint a person to lead assessment, and 2 had no plans to create a separate entity.

Committee Structure

Faculty members were most likely to be the chairs of the committees (99%); of these, 18% were in administrative positions (eg, assistant or associate deans, chairs, directors). One school had 2 faculty members serve as co-chairs. Most committee chairs (75%) were appointed or selected, while 23% were elected by committee members or the faculty. Deans were most likely to make appointments or selections (63%), followed by committee members (21%). In 3 colleges and schools, the chair was designated by a policy or the bylaws. The chairs served anywhere from 0.5 to 20 years for an average (SD) length of 3 ± 3.4 years. The rest of the committee members were appointed or selected (79%) or elected (17%). The dean usually made the appointments (77%); this was often done with input from other administrators or department heads.

A breakdown of the types of committee members and their voting status is shown in Table 2. The most commonly reported ranks for faculty members serving on the curriculum committee were associate professors (85%) and assistant professors (79%).

Of the 83 colleges and schools indicating the voting status of the committee members, most consisted of

voting and non-voting members (63%), and the remainder consisted of all voting members (37%). The number of members on the curriculum committees ranged from 4 to 23 (10.6 ± 3.8). Of the 74 colleges and schools that included at least 1 student on the curriculum committee, 60 (81%) gave the student members some level of voting privileges. Two colleges and schools gave students a partial vote and 1 school allowed the students to cast a single block vote; the remaining 57 colleges and schools gave each student member a full vote.

There were several differences in committee membership based on whether the college or school was established after 1994. Newer colleges and schools had a lower percentage of full professor members (32%) compared to 82% in older programs, fewer alumni members (9% compared to 28%), and fewer external members, such as librarians or experiential directors (27% compared to 43%). Conversely, newer colleges and schools had more non-faculty practitioners than older programs (55% compared to 39%).

The committee membership usually changed in a staggered approach (74%) and most committees turned over at least every 3 years (69%). Sixteen programs (19%) changed their committee memberships on an “as needed” basis, while 13 schools (15%) made changes in membership all at the same time. The current mix of membership on the committees had existed from 1 to 15 years with a median of 1 year (average \pm SD, 2.8 ± 3.2 years). Table 3

Table 2. Curriculum Committees with One or More Members per Category by Voting Status, No. (%)

Voting Member	2008 Total (n = 83)^a	2008 Voting Subset^b	1994 Total (n = 64)^c	1994 Voting Subset^b
Deans	9 (11)	1 (11)	5 (8)	2 (40)
Assistant/associate deans	71 (86)	35 (49)	36 (56)	30 (88)
Department heads/chairs	30 (36)	24 (80)	23 (36)	23 (100)
Faculty members, all ranks and appointments	83 (100)	83 (100)	64 (100)	64 (100)
Students	74 (89)	60 (81)	58 (91)	52 (90)
Alumni	19 (23)	14 (74)	29 (45)	25 (86)
Non-faculty practitioners	36 (43)	27 (75)	—	—
Other ^d	32 (39)	15 (47)	—	—

^a One respondent did not include this information in 2008.

^b Percentages based on total number of colleges and schools in that category.

^c Two respondents did not include this information in 1994.

^d Other includes members from the registrar, student affairs, experiential, assessment, education, and library offices as well as pharmacy residents, faculty senate president, and advisors.

shows the percentage of chairs who chose specific traits as their most preferred qualities in a committee member in the 1994 and 2008 surveys.

Compared to 1994 survey findings, the committee structure had remained similar across chair characteristics, chair and member appointment to the committee, length of appointments, and turnover. The average size of the committee has increased by 1 person from 9.4 ± 3.4 in 1994 to 10.6 ± 3.8 in 2008. The percentage of colleges and schools including students as members has remained relatively constant (91% in 1994; 88% in 2008), but fewer colleges and schools allowed student members full voting privileges (81% in 1994 compared to 68% in 2008). The traits that committee chairs preferred in their committee members also changed. In 1994, vision was selected most often as the most preferred quality (58%); whereas, in 2008, vision was tied with educational experience as the third most desirable trait.

Committee Process

Meeting schedules for curriculum committees were monthly (33%), every other week (20%), and on an as-needed basis (27%). The as-needed meetings often were used in conjunction with a scheduled meeting (35%).

According to the chairs, 54% of the committees were most likely to approach their work from the perspective of their department, 32% tended to use personal points of view, and 11% tended to use either a student or profession perspective. Almost two thirds of the colleges and schools listed goals and objectives of the curriculum as one of their top priorities. Table 4 shows the other top priority areas of focus for the curriculum committees.

The extent to which the curriculum committee was involved in planning, approving, and monitoring the classroom and laboratory portions of the curriculum was high, with 14% and 56% of the committees indicating complete or substantial involvement, respectively. Fifteen (18%) committees had a moderate level of involvement in classroom lecture courses and 5 (6%) committees had minimal involvement.

Most curriculum committees (63%) had moderate involvement in experiential courses, followed by 31% with complete or substantial involvement, and 25% with minimal involvement. Compared to involvement with classroom lecture courses, 52% of the committees were more involved in classroom lecture courses than experiential courses, 46% had equivalent levels of involvement, and 1 committee was more involved in experiential courses than

Table 3. Pharmacy Curriculum Committee Chairs' Most Preferred Traits for Committee Members No. (%)

Committee Member Quality	First Choice 2008, No. (%)	In Top 2 Choices 2008, No (%)	In Top 2 Choices 1994, No. (%)
Objectivity	22 (26)	43 (51)	31 (47)
Commitment to vision	23 (27)	35 (42)	32 (48)
Educational experience	15 (18)	34 (40)	18 (27)
Vision	11 (13)	34 (40)	38 (58)
Leadership	7 (8)	11 (13)	7 (11)
Other	5 (6)	7 (8)	5 (8)
Missing	1 (1)	4 (5)	0

Table 4. Focus Areas for Curriculum Committees at US Colleges and Schools of Pharmacy, 2008 (n = 84), No. (%)

Areas of Focus for Committee Work	Primary Focus	Secondary Focus	Tertiary Focus	In Top 3 ^a
Goals and objectives of the curriculum	40 (48)	14 (17)	15 (18)	69 (82)
Identify problems and fix them	16 (19)	23 (27)	14 (17)	53 (63)
Rules, regulations, accreditation standards	15 (18)	18 (21)	15 (18)	48 (57)
Schedule and sequence courses	4 (5)	14 (17)	13 (16)	31 (37)
Detailed list of the content of the curriculum	6 (7)	6 (7)	10 (12)	22 (26)
Teaching techniques and methods	1 (1)	5 (6)	9 (11)	15 (18)

^a Sum of schools indicating the topic area is either a primary, secondary, or tertiary focus

didactic courses. None of these differences was greater than 1 level (ie, substantial to moderate, moderate to minimal). Neither oversight question was included in the 1994 survey instrument.

Curriculum committees performed many functions as shown in Figure 1. Sixty-five percent of the schools indicated they conducted systematic reviews of courses in the curriculum: 18% reviewed all courses every year; 11% reviewed all courses on a 3-year cycle; 11% reviewed all courses every 4 to 5 years, and 6% reviewed all courses on a 2-year cycle. The remaining 33% of the

colleges and schools conducted their reviews on an “as needed” basis only. Required lecture-based courses were most frequently included in systematic reviews (63%), followed by laboratory-based courses (57%), required experiential courses (35%), and electives (33%).

Seventy percent of the committees were given 1 or more specific charges each year. The charges were made primarily by the dean or other administrators (78%). These were often guided by committee input (28%) and a renewal of standing charges (22%). Four (7%) committees set their own annual charges and 5 (8%) continued

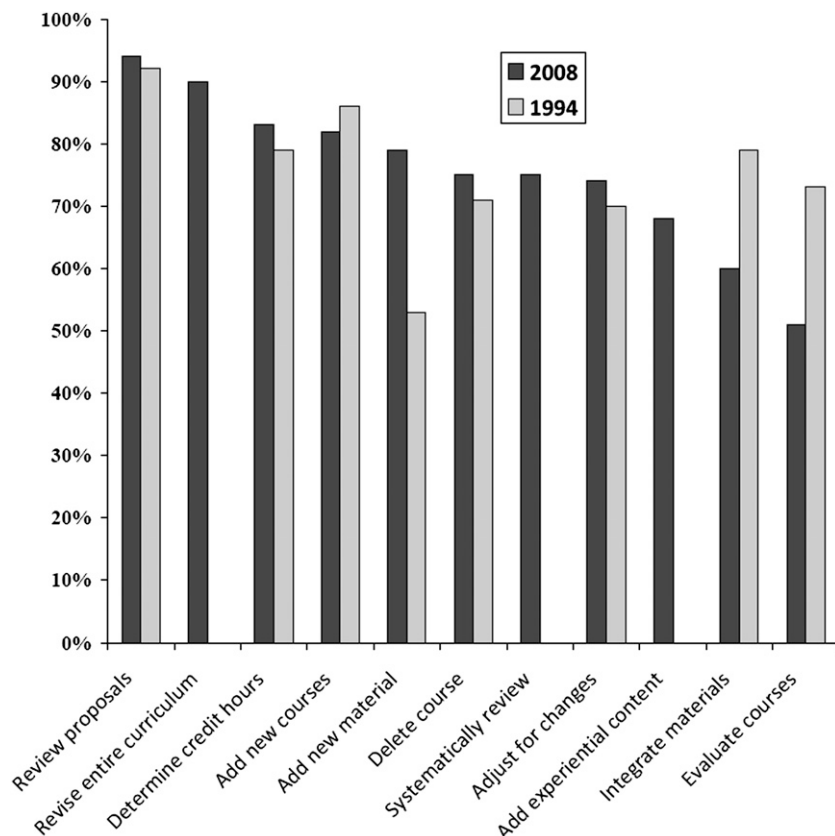


Figure 1. Functions performed by curriculum committees at US colleges and schools of pharmacy, 1994 and 2008. Three new function items were added to the 2008 survey: Revise entire curriculum, systematically review, and add (new) experiential content).

standing charges with no additional input. The priority areas for the committees during the 2007-2008 academic year were most often indicated as “revise the curriculum” with 83% indicating it was a primary priority and an additional 12% indicating it was a secondary or tertiary priority. Motivating faculty members was the lowest priority for most colleges and schools; only 1 school rated it as a primary priority.

Adding new courses (70%) and revising existing courses (62%) were the 2 topics most frequently included as agenda items. These were followed by evaluating individual courses (55%), conducting a comprehensive curriculum review (52%), assessing curriculum competencies (or student outcomes) (45%), developing curriculum competencies (38%), and reviewing prepharmacy requirements or curriculum (36%). The least common agenda topics were evaluating clinical sites for APPEs (2%), restructuring the committee (13%), and promoting innovative teaching strategies (17%). One-quarter of the committees had “other” agenda items, including revision of the entire curriculum (8%), instructional methods (4%), and mapping content or linking outcomes (2%). Individual colleges and schools also were focused on improving integration of courses or topics across the curriculum, implementing a new strategic plan, developing new policies, reviewing joint-degree programs, expanding to a second campus, and determining topics for the curriculum.

Items the chairs would most like to see on their future agendas were evaluating individual courses (56%), conducting a comprehensive review of the curriculum (55%), revising existing courses (48%), and promoting innovative teaching strategies (43%). Few chairs selected restructuring the curriculum committee (12%) and evaluating clinical APPE sites (11%) as desired future agenda topics.

The focus for a majority of the committees continues to be the goals and objectives of the curriculum or fixing problems with the curriculum. Fewer committees now use

“as needed” meeting schedules (26% in 1994 compared to 18% in 2008). The percentage of committees tasked with assessment duties declined from 73% to 51%.

The number of colleges and schools indicating their committee receives specific assignments or charges from the dean increased from 12% in 1994 to 46% in 2008. Agenda priorities of the committees in 1994 were most often listed as evaluating the curriculum, whereas curriculum revision was the most frequent priority in 2008. In both 1994 and 2008, over 90% of colleges and schools reviewed new courses, but committees that evaluate existing courses and practice experiences had declined by almost 20% (73% in 1994 to 51% in 2008).

Impacts and Barriers

The chairs rated their committee’s effectiveness on a 4-point scale ranging from no measurable impact (1) to significant impact (4). The mean (SD) impact over the past 5 years was 3.5 (0.7). Examples of committee impact were primarily related to major or complete revisions of the professional curriculum (49%). Six (15%) of these respondents indicated the need to increase time for IPPE hours in the curriculum as an impetus for the revisions. Completing curriculum maps, especially those that link outcomes to courses, and developing student learning outcomes were examples for 8% and 7% of the colleges and schools, respectively.

Faculty conservatism or reluctance to change was the greatest barrier cited by the chairs (3 ± 1.2 on a 4-point scale). Table 5 shows the relative ratings of all of the identified barriers.

When asked whether certain changes would impact committee effectiveness, the chairs indicated an increase in faculty commitment to improve teaching was most important (3.4 ± 0.9 on a 5-point scale) followed by empowering the committee with more authority and improving communication with committee stakeholders

Table 5. Pharmacy Curriculum Committee Chairs’ Ratings for Barriers to Effectiveness, Mean (SD)

Barrier	2008 (n = 83) ^a	1994 (n = 66)	p value
Faculty conservatism and reluctance to change	3.0 (1.2) ^b	3.3 (1.0)	0.053
Departmental autonomy	2.8 (1.3)	2.8 (1.1)	0.659
Ineffective college-wide planning	2.4 (1.3)	2.5 (1.2)	0.610
Lack of interdisciplinary collaboration	2.4 (1.2)	2.6 (1.1)	0.305
Reliance on “quick fix” not long term change	2.4 (1.2)	2.5 (1.3)	0.619
Lack of authority of curriculum committee	2.3 (1.2)	2.5 (1.2)	0.317
Failure to build a consensus	2.2 (1.0)	2.6 (1.3)	0.032
Different agendas for committee and administration	2.1 (1.2)	2.2 (1.3)	0.781
Failure to involve departments early in the process	1.9 (0.9)	2.0 (1.04)	0.679
Poor communication among committee members	1.9 (0.9)	1.9 (0.9)	0.962

^a One of the 84 schools with a curriculum committee did not provide this information.

^b Scale ranged from 1 = not at all to 5 = very high (barrier).

(3.2 ± 1.2 and 3.2 ± 0.9 , respectively). Changes deemed least likely to impact committee effectiveness were reducing the number of committee members (2.2 ± 1.0), improving communication within the committee (2.7 ± 1.0), and providing a forum for student views (2.9 ± 0.9).

The extent to which the 2007 ACPE accreditation standards have affected the work of the curriculum committee was rated on a 4-point scale ranging from no measurable impact (1) to significant impact (4). The impact of the new accreditation standards on the committee was 3.7 ± 0.7 . The new standards for experiential education, especially IPPEs, were the most frequently cited example of how the 2007 accreditation standards impacted the committee's work (31%), and this was frequently linked to a need to make major revisions to the curriculum (23%). These were followed closely by assessment of the current curriculum and student outcomes (20%). Other reasons included the need to create a curriculum map tied to outcomes (8%), revise or create program outcomes (8%), and prepare for site visits (6%).

In the 1994 survey, faculty conservatism and reluctance to change and departmental autonomy also were rated as the 2 greatest barriers to committee effectiveness (3.3 ± 1.0 and 2.8 ± 1.1 , respectively). Compared to 1994, there was a decrease in faculty conservatism that was almost significant and a significant decrease in the rating of failure to reach a consensus. Similar results for level of impact also were seen, but the reasons have changed from implementing a new doctor of pharmacy curriculum in 1994 to updating and revising the PharmD curriculum to meet new standards, incorporate more experiential learning, and assess the achievement of learning outcomes.

Perceived Level of Achievement

As examples of a successful outcome for the committee, the chairs most frequently responded curriculum revision (56%). These revisions included either major or complete revisions to the curriculum (31%) or minor changes to portions of the curriculum (25%). These were followed in frequency by success in developing or creating student learning outcomes (18%); developing systematic, formal assessment or review processes (15%); and completing curriculum maps (13%).

Examples of efforts that were not successful were more diverse but could be categorized roughly into issues related to lack of support from or collaboration with administrators or faculty members (21%), lack of leadership (17%), infrastructure issues that prevented effective change (13%), limited assessment activities or data (12%), poor communication (7%), and curricular changes that did not work (7%). Half of the curricular changes that failed were related to changes in the experiential portion

of the curriculum (eg, switched to pass/fail, then had to go back to graded; added IPPE without looking at whole curriculum).

Committees continued to have their greatest successes in reviewing, revising, and implementing all or some of their curricular content and structure. In 1994, 3% of colleges and schools of pharmacy reported success in implementing an outcomes-based curriculum; this focus on outcomes and assessment increased six-fold to 18% in 2008, which was consistent with the focus on outcomes and assessment rather than curricular content. In 1994, failure to come to grips with outcomes assessment was mentioned once; in 2008 it was one of the main areas where committees were not as successful as they wanted to be.

DISCUSSION

In 2008, most of the colleges and schools that responded to the survey indicated that they now had separate assessment or evaluation groups. Details about the duties of these new entities were not collected so it is not clear whether curriculum committees have turned over their assessment activities to their assessment counterparts. The number of chairs listing assessment activities like curriculum maps or student outcomes assessments as agenda items or foci for committee work suggests that not all colleges and schools have moved responsibility for these activities to their assessment group. Kirschenbaum and colleagues found that curriculum committees often had the greatest or second greatest responsibility for conducting assessments, particularly for curriculum maps, review of course materials, and comparisons of outcomes against benchmarks or ACPE standards.⁷

The structure of the committees is relatively similar between colleges and schools established prior to and after 1994 in that faculty members comprise the majority of the committees. Schools appear to recruit committee members from available faculty, administration, and student pools, although almost 1 in 3 schools (28%) had no student vote on the committee either because there were no student members or the student members were not given voting privileges. Not surprisingly, newer colleges and schools of pharmacy have relatively higher numbers of administrators and preceptors than their older counterparts. As these newer programs enroll more students and graduate more classes, their committees will have more opportunities to recruit additional member types.

In terms of experience and continuity, there are several aspects of curriculum committees that may be less than ideal. The majority of faculty members are at assistant and associate ranks. While some full professors are involved, their experience and leadership may be

underused in this critical committee. Likewise, the frequent turnover in membership must make it difficult for committees to work on long-term monitoring and revision activities for the curriculum. Colleges and schools looking at curriculum overhauls or major changes may be best served by creating a more stable membership that remains intact over several years.

Several interesting results were observed for committee structure and membership. One is the decrease in the percentage of committees that do not give student members voting privileges on curricular matters. A study conducted by Bazil and Kirschenbaum in 1997, just 3 years after the initial curriculum committee survey, found that 75% of curriculum committees gave their student members voting privileges.⁸ This decreased to 68% in the 2008 survey, suggesting a continual decline in student voting privileges. Ironically, this trend is contrary to accreditation standards, which encourage student involvement in college and school governance (see Standard 22).¹ Whether the trend reflects poor student attitude towards committee service or poor appreciation of student input on the part of the faculty or administration is not known. Further research into student involvement in key pharmacy committees would seem to be warranted.

The impact of accreditation standards on the focus and workload of curriculum committees was apparent in both the 1994 and 2008 surveys, although the reasons for the impact were different. Changes in the agenda topics are likely due to the timing of the release of new standards and not a trend per se, with committees in 1994 gearing up for new standards in 1997 and the committees in 2008 reacting to the recently approved 2007 standards. As standards are updated, changes are being incorporated into committee charges. These results were not surprising given the strong link between standards for curricular and student outcomes and the role of curriculum committees. Likewise, the change in the chairs' preference of traits in their committee members from 1994 to 2008 is most easily explained as the result of changing accreditation standards and the evolution of pharmacy education.

Differences found between newer programs and programs established prior to the 1994 survey were less than expected. Given the opportunity that colleges and schools of pharmacy had to build a new program, including a new curriculum committee, the authors expected to find some creative approaches. However, the differences found, such as fewer alumni and full professor members, can be explained by differences in the programs' ages at the time of the survey, ie, newer colleges and schools had few full professors or alumni to invite.

The majority of chairs indicated that their committees conducted systematic, regularly scheduled reviews of existing courses. What is not known is how these reviews are being conducted, ie, are they based on syllabi reviews, observations, student comments, or faculty input? Are the reviews a formal process that records information on standardized forms or an informal method that leads to a decision the course is meeting the intended goals? Further research is needed into the processes used to conduct these systematic reviews.

This survey also explored the extent to which curriculum committees provided oversight of and input for the experiential portions of their programs. Although this was done to a lesser extent than work with didactic parts of the curriculum, most committees did have some level of involvement in that aspect of their curriculum. How this was being conducted could not be determined in this survey, but there may be interest in further research into this aspect of curriculum development and monitoring.

Bland and colleagues found 6 essential features for successful change in medical schools that can be applied to pharmacy colleges and schools: leadership, cooperative climate, participation by organization members, evaluation, human resource development (specifically training and incentives for changing behavior), and politics.⁴ Of those 6 characteristics, leadership approach was found to be the most influential. Deans and senior faculty members were key because these leaders tend to control or influence all the other characteristics of successful change. The results of this survey show that curricular change in schools of pharmacy is thwarted by the same kinds of barriers. With the exception of the human resources development issues, the lack of the other characteristics was cited by chairs as contributing to curricular changes that did not succeed. In addition, the frequent turnover in membership, dependence on more junior faculty members, and reluctance to change likely contributed to the barriers encountered by the committees.

Potential limitations of this study are typical of those encountered with survey research. The researchers must assume that respondents answered honestly and their information was accurate. Only the chairs of the curriculum committee served as respondents, and their opinions or observations may differ from those of their committee members. Some items also required the chairs to recall events from the past year, which may have introduced recall bias. Two methods, e-mail and mailed hard copies, were used to distribute the questionnaires and this may have introduced differences in type of responses. The wording of questions also may have affected how responses were framed or worded. Care was taken

not to over interpret wording or phrases used in the narrative responses. Because the response rate was high (85%) for a small population and the respondent demographics mirrored the whole population, the authors interpreted the responses as representative of the population sampled. The results are best generalized to curriculum committees at colleges and schools of pharmacy.

CONCLUSIONS

Curriculum committees continue to play an important role in pharmacy programs by serving as the designated groups charged with planning, implementing, monitoring, and updating curricula. The current emphasis on program assessment has led to the creation of separate assessment committees at most colleges and schools; the impact of this on curriculum committee business is not yet known. Although some committee structures and functions have remained the same since 1994, responses to the 2008 survey indicated that the 2007 accreditation standards had a substantial impact on workloads and priorities of the committees. For pharmacy curriculum committees, success of curricular reform appears to be significantly influenced by faculty and administrative leadership and support.

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