INSTRUCTIONAL DESIGN AND ASSESSMENT

Pharmacy Student Focus Groups for Formative Evaluation of the Learning Environment

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Objective. To develop a student focus group process for formative evaluation of the learning environment in a college of pharmacy.

Design. Student focus groups were formed and met from fall 2002 to spring 2006. During spring 2005, student cohorts (first- through third-professional years) were surveyed and anecdotal evidence about the process was gathered from faculty members.

Assessment. Student opinions about the effectiveness of the focus groups were fairly positive, with 59% to 87% agreeing that the process allowed students to communicate effectively with faculty members. The main problems identified were lack of communication between focus group members and the student body, and the lack of response by some faculty members to student concerns. Based on anecdotal evidence, faculty members agreed that the process encouraged student development but was less useful for pedagogical issues.

Conclusion. Focus groups can be an effective way of providing feedback to faculty members and students about the classroom learning environment if students are trained to give appropriate feedback and professors are supported in responding to student input.

Keywords: formative evaluation, focus groups, assessment

INTRODUCTION

The Accreditation Council for Pharmacy Education released new standards and guidelines for colleges and schools of pharmacy to implement formative evaluation programs to improve pharmacy education.[1] In anticipation of this action and as part of a program for ongoing improvement, in 2002 the University of Kentucky College of Pharmacy (UKCOP) instituted the Student Liaison Committee (SLC), a structured program of student focus groups.

The SLC was intended to provide a systematic method for confidential, timely exchanges between professors and students on their perceptions of the pharmacy course in progress. This paper describes the development of the SLC process at UKCOP and student opinions of the process, and gives recommendations for improving the program.

Focus groups have been used since just after World War II as a means of gathering qualitative information on a huge variety of issues.[2] Focus groups are defined as "groups of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research."[3]

The advantages of focus groups include their ability to demonstrate consensus on the topic at hand, explore issues more deeply than is possible with a survey, uncover new issues through discussion, reflect participants' experiences and perceptions rather than researchers' ideas, and gather data more quickly than individual interviews. The drawbacks of focus groups include the necessarily limited number of participants, lack of independence among participants (ie, the data points are not independent), and the highly qualitative and idiosyncratic results. The moderator is a key figure in focus group research as he or she shapes the discussion and can therefore influence the results. Remaining objective and detached from the discussion while encouraging open dialogue through welcoming behaviors is a crucial skill for the moderator.[2]

Focus groups are increasingly used in educational settings, including various medical education settings.[3] Focus groups are useful when there is a power difference between participants and decision-makers,[4] which is often the case in education. Kevern and Webb describe the use of focus groups in curriculum development for

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nursing education.[5] They assert that focus groups can be used to evaluate students' views and perceptions of their education and to ensure that curriculum changes represent all stakeholders' perspectives. Fjortoft describes the use of focus groups to discover why pharmacy students do or do not attend class, arguing that both students and teachers bear responsibility for attendance.[6]

This paper focuses on formative evaluation or assessment intended solely for helping faculty members improve the learning environment for students. Formative evaluation provides feedback and diagnostic information while a learning experience such as a class is in progress. The SLC program was created before accreditation standards requiring formative evaluation plans were released, for the purpose of gathering systematic valid feedback that could improve student learning.

DESIGN

The SLC was based on a well-established formative feedback process called the "Small Group Instructional Diagnosis" (SGID), a whole-class interviewing technique. The SGID protocol was developed for improving biology teaching and learning in the early 1980s.[7] The SGID protocol has become a popular and widely used tool for teaching and learning development, and many variations on the process have emerged. The SGID has 5 basic steps, beginning with planning the interview.[8] During the interview itself, students consider and come to consensus on questions such as "What helps your learning in this class? What hinders your learning in this class? What suggestions do you have for change?" The interviewer collects all feedback and organizes the information into a report for the instructor. The interviewer and instructor meet for a discussion and debriefing. The final step is for the instructor to respond to students. It is important that students be clearly informed that substantial changes may not be possible midway through the semester, but that their comments are taken seriously. Usually, a SGID interview occurs once per semester, preferably before the midpoint of the semester.

The SLC process instituted in 2002 was a modified version of the SGID. Each year, UKCOP classes were divided into 10 small groups for completing assignments and laboratory sessions. The SLC was composed of 10 members, 9 of whom were randomly selected representatives from each small group. The tenth member was the class vice president, because he/she was a representative selected by the students. (Ten participants is about the maximum number for effective focus group work.[4]) SLC members received training about the purpose of assessment and feedback, on focus group methodology, and on offering constructive feedback. SLC members were encouraged to give comments that were relevant, appropriate, specific, positive, and critical, and to give suggestions for improvement.

Personnel from UKCOP's Office of Education Innovation (OEI) participated in SLC discussions as moderators and recorders, with the roles being kept separate. Faculty members whose classes were under discussion were periodically invited to SLC discussions, but only attended the part of the meeting that focused on their particular class. Faculty generally did not ask specific questions in the SLC discussions, but could have questions included by contacting the OEI ahead of time.

The UKCOP curriculum was arranged in blocks, with all classes having examinations approximately every 3 weeks, during which time lectures were suspended. SLC discussions were held after each set of block examinations, for a total of 3 sessions per semester for students in each professional year. Each of the 5 or 6 courses that students were currently in received, on average, 10-12 minutes of discussion during each 1-hour meeting. SLC members were to represent their entire class, meaning that they were responsible for gathering ideas from their peers before discussions. Discussions followed a format similar to the SGID. A recorder from the OEI took detailed handwritten notes during the discussion. The moderator provided a report to each instructor and to course coordinators within 48 hours. Follow-up consultations were offered. Instructors were requested to take a few minutes of their next class to respond to feedback in the SLC report and to describe any changes they considered.

An online survey using *CoursEval* was administered in spring 2005 to determine students' perceptions of the SLC process. All students (N = 288) from professional years 1, 2, and 3 (P1, P2, and P3, respectively) were asked to complete the survey instrument. The survey instrument had 7 Likert-scale items for the student body and 3 demographic items. SLC members received these 10 questions plus 3 more asking specifically about their experience on the SLC. The survey also included 2 qualitative questions that allowed students to make free comments. Table 1 gives the entire text from the survey instrument.

Responses to qualitative questions were coded into categories as described below. If a single comment communicated more than one idea, each separate idea was coded into the appropriate category, meaning that the total number of ideas exceeded the number of students who provided comments. Coded comments were counted; a total of 114 comments were coded for qualitative question 1 (42 from P1, 46 from P2, and 26 from P3). A total of 117 comments were coded for qualitative question 2 (32 from P1, 52 from P2, and 33 from P3). For Qualitative question

Table 1. Content of the Student Liaison Committee's Survey Instrument Administered to Pharmacy Students

Demographics
  1. Year in College of Pharmacy
  2. Gender
  3. Please indicate your age (optional)

General Questions about the Student Liaison Committee
Scale: Strongly disagree (1); Disagree (2); Agree (3); Strongly Agree (4)
  4. I understand the purpose of the Student Liaison Committee.
  5. The Student Liaison Committee is an effective way to communicate class perceptions to faculty and administration.
  6. The Student Liaison Committee accurately reflects the perceptions of the entire class.
  7. I feel comfortable providing information to the Student Liaison Committee member(s) for discussion at the next SLC meeting.
  8. I often provide input to the Student Liaison Committee member(s) before they attend the committee meeting.
  9. The Student Liaison Committee members in my class make an attempt to get student input before the meetings.
  10. The Student Liaison Committee members readily provide feedback to the class after each meeting.

Student Liaison Committee Members (Current and Past)
  11. As a member of the Student Liaison Committee, the time required to participate was worthwhile.
  12. As a member of the Student Liaison Committee, I understood what was expected of me.
  13. As a member of the Student Liaison Committee, I represented my class in a professional manner.

For All Students (Please comment)
  14. What ways has the Student Liaison Committee benefited your class(es)?
  15. What improvements would you suggest for the Student Liaison Committee?

2, comments such as "None," "I don't know," and "Not applicable," were not coded. There were a total of 13 such uncoded comments.

Qualitative question 1 was, "In what ways has the SLC benefited your classes?"
- No benefit: included comments such as not applicable, none, no changes, nothing, not sure, no benefits, and other similar phrases.
- Benefit: included comments indicating that professors had made at least some changes in response to the SLC.
- Voice: included positive comments indicating that students felt they had a voice and a forum but that did not indicate any faculty response.

Two terms, "benefit" and "voice," were used to classify positive responses in order to differentiate between comments that indicated faculty members had made actual changes in response to the SLC input, and comments that suggested the students were glad to have a chance to "speak their piece" even if no changes resulted.

Qualitative question 2 was "What improvements would you suggest for the SLC?"
- Communication: included suggestions for distributing meeting minutes, reporting to the entire student cohort, and announcing SLC meetings ahead of time.
- Representation: included suggestions for different methods of selecting SLC members and suggestions for gathering broader feedback from the whole student cohort.
- Professor accountability: included suggestions that teachers should be held accountable for responding to suggestions from the SLC.

Communication and representation were not independent concepts. Ineffective communication led to lack of representation because non-SLC students were not able to give input to the SLC.

Besides the student survey, all SLC reports were gathered for fall 2005 and spring 2006, for a total of 18 reports (3 student years, 3 class blocks per semester, 2 semesters). Although the reports were a rich source of data on teaching and learning, specific details and comments could not be used in this paper because the reports were confidential and the personal property of the faculty members to whom they were provided.

ASSESSMENT

Table 2 shows the response rates and demographic data for each professional year cohort. Tables 3, 4, and 5 present student responses to Likert-scale questions about the SLC. The majority of students indicated that they understood the purpose of the Student Liaison Committee (>87% agreed or strongly agreed) and felt comfortable providing information to committee member(s) for discussion at the next SLC meeting (>81% agreed or strongly agreed). Although statistical significance cannot

Table 2. Student Response Rates to Student Liaison Committee Survey and Demographics

	P1	P2	P3
Response rate, %	87.4	86.9	92.4
Number responding	90	80	86
Gender, %			
Female	69	76	74
Male	31	24	26
Age, %			
18-21	45	19	0
22-25	39	66	75
25-29	7	9	16
30+	9	5	9

P1 = first-professional year (N = 103); P2 = second-professional year (N = 92); P3 = third-professional year (N = 93)

be assigned to these results, first-year students indicated higher endorsement of the SLC on all questions and the second-year class indicated the least satisfaction overall with the SLC.

The lowest overall responses were for the statement, "The SLC members readily provide feedback to the class

Table 3. Student Responses to General Items About the Student Liaison Committee

Statement	Percent of Responses*		
	P1	P2	P3
I understand the purpose of the SLC.			
Strongly disagree	0	1	0
Disagree	6	11	4
Agree	48	61	54
Strongly agree	47	26	42
The SLC is an effective way to communicate class perceptions to faculty and administration.			
Strongly disagree	3	11	4
Disagree	9	30	18
Agree	64	53	64
Strongly agree	23	6	14
The SLC accurately reflects the perceptions of the entire class.			
Strongly disagree	3	9	8
Disagree	26	39	22
Agree	61	48	60
Strongly agree	10	5	9

*Columns do not sum to 100% due to rounding.
P1 = first-professional year (N = 90); P2 = second-professional year (N = 80); P3 = third-professional year (N = 85)

Table 4. Student Responses to Items About Their Participation With the Student Liaison Committee

Statement	Percent of Responses*		
	P1	P2	P3
I feel comfortable providing information to the SLC members for discussion at the next SLC meeting.			
Strongly disagree	1	3	2
Disagree	8	18	9
Agree	62	68	58
Strongly agree	29	13	31
I often provide input to the SLC members before they attend the committee meeting.			
Strongly disagree	7	11	9
Disagree	36	44	34
Agree	46	38	41
Strongly agree	12	8	15
The SLC members in my class make an attempt to get student input before the meetings.			
Strongly disagree	2	9	4
Disagree	17	26	18
Agree	49	53	59
Strongly agree	32	13	20
The SLC members readily provide feedback to the class after each meeting.			
Strongly disagree	7	24	24
Disagree	29	54	46
Agree	49	20	25
Strongly agree	16	1	6

*Columns do not sum to exactly 100 due to rounding.
P1 = first-professional year (N = 90); P2 = second-professional year (N = 80); P3 = third-professional year (N = 85)

after each meeting," with only 65% of P1, 21% of P2, and 31% of P3 students agreeing or strongly agreeing. When asked if they "often provided input to the SLC member(s) before the next SLC meeting," student response rates in the categories of agreeing or strongly agreeing fell to 58% (P1), 46% (P2), and 56% (P3). Such lack of mutual communication might contribute to the disappointingly moderate level of agreement with the statement that the SLC presented an effective and accurate reflection of class perceptions.

Most current and past SLC members in every professional year gave favorable responses when asked to

Table 5. Current and Past Student Liaison Committee Member Responses to Items About Their Participation With the Student Liaison Committee

Statement	Percent of Responses*		
	P1	P2	P3
As a member of the SLC, the time required to participate was worthwhile.			
Strongly disagree	11	8	0
Disagree	0	8	8
Agree	22	38	54
Strongly agree	67	46	38
As a member of the SLC, I understood what was expected of me.			
Strongly disagree	9	0	0
Disagree	0	7	7
Agree	18	57	48
Strongly agree	73	36	45
As an SLC member, I represented my class in a professional manner.			
Strongly disagree	11	0	0
Disagree	0	0	8
Agree	11	57	40
Strongly agree	78	43	52

*Columns do not sum to 100% due to rounding.
P1 = first-professional year (N = 9); P2 = second-professional year (N = 14); P3 = third-professional year (N = 26).

evaluate their experiences in the SLC. Between 84% and 100% of each class agreed or strongly agreed that the time spent as a member of the SLC was worthwhile, that they understood the expectations placed upon them, and that they represented their class in a professional manner.

A significant number of comments from P1 and P3 students (43% and 48%, respectively) on question 1 indicated that the students felt that the SLC enabled them to have a voice by which they could express concerns to faculty members and administration. A lower number of P1 and P3 students (34% and 35%, respectively) indicated that actual results or improvements occurred as a result of student input.

Among PY2 students, who as noted above were the least likely to agree that the SLC represented their concerns to faculty members, only 28% felt that communications were strengthened. Thirty-four percent of P2 students indicated that they received no feedback from the SLC or faculty member. However, 34% of the P2 class indicated that positive changes occurred in the classroom as a result of student input. These responses may reflect

students who interacted with committee members and provided input and therefore had greater awareness of changes being made.

Approximately 17% of the comments in each class indicated that students were aware of no benefits to their class from the SLC. These students, especially the P3 class, expressed concern that lack of effective communication from the SLC members to the class was the problem.

The overwhelming response to qualitative question 2 by each class was to encourage better communication between the SLC members, faculty members, and non-SLC students (65%, 78%, and 75% from P1, P2, and P3, respectively). Specific suggestions included that SLC members should announce dates and times for SLC meetings, hold a class meeting prior to SLC meetings to gather a consensus of student opinions, provide standardized forms to collect student input, and provide minutes of the meetings to the class. Most students felt that faculty members should attend the SLC meeting at least once during the semester and provide feedback to the concerns or issues introduced by the committee. Other suggestions concerned the make-up of the committee: each small group should elect a representative, students should be able to volunteer, SLC members should change every semester, and faculty members should be allowed to decide who should serve. Finally, several students suggested that SLC meetings should be longer to provide more discussion time.

SLC Reports

The general results reported here describe themes of the general questions asked in the interviews: What helped your learning in this class? What hindered your learning in this class? What suggestions do you have for change?

Students' responses to the question "What helped your learning in this class?" included the following instructor behaviors: interest, enthusiasm, giving clear expectations, willingness to spend time answering questions, encouraging student civility and discouraging rude behavior, making the organizational structure of the information clear, providing easy-to-use visuals, not going too quickly or too slowly in lectures, and providing prompt feedback on assignments.

Students' responses to the question, "What hindered your learning in this class?" included: lack of organization in lectures, hard-to-see visuals and hard-to-hear speaking, lectures that were too fast for effective note-taking, lack of clear expectations or learning objectives, lack of feedback, noise or distractions in the classroom, and fatigue. The question about hindering learning also

provoked many complaints about examinations, although examinations were not actually the point of the question. Comments about poor examination design included: absence of point distributions when questions differed in their weight, multiple-answer multiple-choice questions, and mismatch between the expectations communicated in class and material on the examination. Other complaints included too-small print on examinations making them difficult to read, lack of light and space in the examination room, and typos or mistakes on the examination reflecting a lack of proofreading.

Anecdotal Faculty Opinions of the SLC

Anecdotal data solicited from faculty members reflected mixed opinions about the SLC. At least some faculty members felt that the SLC process had little value for them. These faculty members commented that students focused on nonsubstantial issues, problems out of the control of faculty members, and the difficulty of tests. Other faculty members indicated that the process had value for them and that they had made some changes based on SLC feedback. Faculty members generally felt that students needed more training in how to give constructive feedback, the SLC process was beneficial for students, the SLC process would probably meet accreditation standards, and the SLC reports were provided in a timely manner.

DISCUSSION
SLC Reports

Students can give the best input on the things that influence their learning on a daily basis, such as issues of classroom management, organization of material, quality of visuals and "props," a teacher's daily interactions with students, and a teacher's ability to inspire and challenge. Students currently in or having just finished a class are not in a good position to give input on a teacher's level of knowledge of the subject, the place of the class in the curriculum or its value to their professional development as future pharmacists, or the quality of assessment activities (eg, tests).[9]

The strategies that students identified as helpful for learning were consistent with the literature on teaching in higher education settings.[10] It was not surprising that students felt that they learned the most when instructors demonstrated caring, spent time answering questions, were organized, gave clear direction, and so forth. Likewise, the reported hindrances to learning aligned with the teaching literature, were not unexpected, and included some teaching behaviors that were the converse of helpful teaching behaviors (eg, providing information without structure, not ensuring that all students could see and hear material during lectures).

Student comments about examinations were the most problematic, not because they were all invalid but because they were easily interpreted by faculty members to reflect a "performance" orientation rather than "mastery" orientation toward learning. In other words, faculty members concluded that students wanted examinations to be designed to produce a good grade rather than to test and augment their learning.[11] Comments that definitely reflected performance orientation (resenting low grades, not wanting to re-learn material) may have overshadowed comments that evaluated examinations fairly. Furthermore, most faculty members have never been trained to create reliable, valid, robust assessment instruments; it was easy to faculty members to react negatively to comments from students who were even less knowledgeable about test design.

Students also gave many other responses that they were not qualified to give, especially considering the timing of the feedback (ie, while the class was in session). Comments about faculty members' lack of knowledge, the usefulness of a certain topic or activity in the curriculum as the curriculum related to their future pharmaceutical careers, or the value of a particular learning activity for their future pharmaceutical careers, were not appropriate for students to give according to good formative evaluation practice.[12]

Planned Improvements

Based on the students' concerns and the faculty members opinions shared in the limited anecdotal data we collected, we plan to make several adjustments to the SLC process. Our near-future plans include gathering faculty members input more systematically than in anecdotal conversation.

Ask students to consider the concept of learning more specifically. If students provide rationales in terms of learning rather than test-taking or grades for their instructional suggestions, faculty members will probably find their suggestions more credible. Furthermore, the students themselves would benefit from deliberate consideration of their learning.

Ask about the students' role in their learning. Asking students to articulate specific actions they can take to improve their learning would benefit the students as well as demonstrate to faculty members that students are indeed aware of their responsibilities as learners. Faculty can inform students about the activities that will lead to success in their classes; students need to inform faculty members to what extent they are engaging in those activities.

Ask a separate question about examinations. As mentioned, many comments in response to the question "What hinders learning?" were actually about examinations rather than learning. Examinations are key events for

students with enormous future consequences, and as such, they guide students in their studying and learning. Separating examinations from other learning issues may allow faculty members to address problems without confusing students' concerns for examinations with a reluctance to learn.

Questions about examinations will have to be carefully worded to elicit students to consider examinations from the perspective of creating fair, effective assessment devices, rather than examinations being barriers to students' achieving high grades in a course. The suggestion will also need to be made that faculty members consider examinations as powerful learning tools in addition to being mechanisms for conferring grades.

Have SLC meetings less often, schedule longer sessions, schedule them in the middle of blocks rather than during examinations, and better publicize them. One problem with our SLC format was that each class could only be discussed for a few minutes. Focus groups need time to move beyond opening and introductory questions to more substantial issues.[11] Students did not have time for learning issues to be raised so they naturally focused on bothersome classroom events. Giving more time for discussion should allow the groups to explore more pedagogically relevant ideas. Also, students will be encouraged to consider their entire experience rather than discussing each class separately. In addition to giving more time for substantial issues to arise, individual faculty members may not be named. This might remove pressure from faculty members who may feel singled out if students have many complaints about a particular class.

Having the meetings in the middle of blocks will mean that some issues, particularly presentation or technical problems, can be addressed in time to benefit the students while they are in the block. Also, students are very tense during examinations; rescheduling may allow them to relax during the meetings.

At the end, ask for any suggestions for specific classes. While the goal of the redesign of the questioning is to avoid singling out faculty members unnecessarily, sometimes there are problems that are specific to individuals. Asking for specific suggestions after having spent time considering learning may help students to frame their comments in terms of learning.

Reorganize SLC reports. One frustration that faculty communicated was that students commented on issues over which faculty members had no control; for example, the problems might be programmatic or environmental. Faculty members tended to resist such input because they could not address the problems, yet felt blamed for them. We will re-organize the SLC reports to identify and clarify issues that faculty members can

affect, while simply informing them of other issues students are concerned about.

Consider using SLC information in other ways. One particularly valuable suggestion came up in informal conversation with a faculty member. The recommendation was for students to comment on classes a semester or a year after they are over. Although this would not provide formative feedback for the class in progress, students could make more mature remarks about the class and its place in the curriculum. The SLC process to date has focused on improving the learning environment for the students while they are still in a particular class. The process has not been used to inform curricular decisions or other programmatic issues, although information from the focus groups could provide one data stream for such conversations. The condition for such use of focus group information is that appropriate attention must be paid to confidentiality so that neither students nor individual faculty members are harmed.

CONCLUSION

Establishing a Student Liason Committee at the University of Kentucky College of Pharmacy has proven to be an effective way of providing formative student feedback to faculty members. Students did not actively resist participating in the SLC and many of them provided useful insights. Faculty members were not uniformly opposed to receiving information from the process, and agreed that students themselves benefited from participating in the SLC process.

Changes need to be made in our current system and in the questions that students are asked to consider. The proposed changes are based on our perceptions of data we have collected formally from students and on limited, very informal data collected from faculty members. Our recommendations provide a starting point for faculty focus groups or surveys.

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