Programmatic Assessment in U.S. Schools and Colleges of Pharmacy: A Snapshot

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This project was conducted to understand how schools are responding to the need to develop programmatic assessment. The deans at the 80 U.S. schools and colleges of pharmacy were faxed a questionnaire developed to elicit information. A second questionnaire was faxed two weeks after the first questionnaire. Fifty-five institutions responded. Ninety-eight percent of the respondents reported having curriculum committees, but only 49 percent reported having assessment committees. Seventy-one percent have approved a list of general education abilities. Regarding programmatic assessment, deans were the most frequently reported individuals driving the development of assessment. While the NAPLEX was the most frequently cited instrument for programmatic assessment, many respondents reported using instruments other than the NAPLEX. While some pharmacy schools have implemented abilities-based educational programs, there is progress to be made still. Hence, need exists for support and educational initiatives that facilitate implementation of these new programs.

INTRODUCTION

Scholars and scientists have long expected each other to document the influence of the experimental manipulations or interventions that they use while conducting research. Rigor in this area of scholarship is necessary, expected, and explicit. This expectation is enforced through the peer-review process that accompanies the publication and presentation of research findings. Explicit documentation of outcomes is not as advanced in teaching endeavors as it is in research endeavors, hi other words, documentation that student learning has resulted from an educational intervention (e.g., a course, or an entire program) is not as complete as the documentation expected for a research intervention, which is scruti-
nized through the peer-review process. Every instructor conducts some type of assessment of student learning for the purpose of assigning course grades, such as graded exams, presentations, and assignments. These assessments provide feedback as to whether the student has learned the material or, some may argue, whether the teacher has effectively taught the material. But, what about assessments of student abilities that fall outside the purview of course-specific assessments? Assessment of the entire program (or the effectiveness of an entire programmatic intervention) is more difficult to develop and implement. The goal is “an ongoing process aimed at understanding and improving student learning”(1). Due to the value of understanding student learning and the activities that are necessary to improve student learning, this ongoing process has several valuable purposes.

These uses of assessment have both positive and negative aspects. Assessment can be used to encourage improvement on the part of faculty and students, encourage continuous reflection on goal attainment (similarities can be drawn between this and Total Quality Improvement or Continuous Quality Improvement), support strategic planning, and provide objective information on the effectiveness of teaching. These can be categorized as positive uses. Assessment also can be used to provide evidence of accountability and evidence of cost-effectiveness. Depending on the perspective, these can be viewed as negative uses. It is clear that the usefulness of assessment comes from understanding and improving student learning. This activity can (and arguably should) go beyond the individual instructor in an individual class to a process of understanding and improving student learning within an entire curriculum.

Programmatic assessment is the evaluation of the institution’s entire curriculum to determine its effectiveness in meeting its educational outcomes. This differs from individual assessments as it can be used to capture the effectiveness of a much larger educational intervention — that of an entire curriculum or program. These assessments can be formative or summative in nature. Formative assessments are conducted with the intent of modifying or improving an activity before it is completed or repeated. Summative assessments are performed with the intent of determining the degree to which an outcome has been attained at the conclusion of an activity(2). Figure 1 illustrates how each course contributes to the overall objective of student learning by contributing to the acquisition of abilities (general and professional). Further, it illustrates how assessments can be administered at various points in the curriculum to determine the effectiveness of that curriculum. The findings of assessments admin-istered at the programmatic level are useful to the stakeholders in education, namely the taxpayers, university administrators, students, faculty, and alumni. Additionally, potential stakeholders might be interested in the effectiveness of educational interventions; these include student applicants, faculty applicants, and granting institutions. Another group of interested parties includes the accrediting bodies. In pharmacy particularly, the American Council on Pharmaceutical Education has established standards that require some process of programmatic assessment to document the achievement of educational outcomes(3).

Programmatic assessment must begin by establishing the educational outcomes of interest. In pharmacy education, the American Association of Colleges of Pharmacy has encouraged school and colleges of pharmacy to develop general abilities and professional practice-based outcomes(4). Abilities are comprised of knowledge, skills, attitudes, and values(5). For example, the ability to communicate can be sub-divided into knowledge of communication processes and methods, the act of communicating, attitudes that predispose one to communicate, and values that recognize the desirability of active listening. Ideally, within a program, there will be learning opportunities that foster each aspect of each ability that is purported to be an educational outcome. And, throughout the curriculum there should be assessments that determine whether the abilities, which are purportedly fostered within a program, are actually acquired by the student before they graduate.

**ASSESSMENT OF EDUCATIONAL OUTCOMES**

Assessment of an educational outcome begins with a definition of the ultimate outcome. Many times this is a difficult task. For example, it is difficult for many to establish what critical thinking actually is. More puzzling to many (except those comfortable with psychometric measures) are the difficulties associated with developing and employing valid and reliable mechanisms to test for ability acquisition. While assessment mechanisms can be subjective or objective, there is little to assist faculty in determining whether the assessment instrument measures what they think it measures (validity) and whether the instrument is precise enough to be considered reliable.

One can see that there is no single, correct way to implement programmatic assessment. Rather, each school could develop their own educational outcomes (abilities) and develop their own mechanisms to test for ability acquisition. And, to some degree, this is beneficial. Faculty involvement in the assessment process is recommended(6). Yet, there is no need to ignore what has worked for other institutions.

**IMPETUS FOR PROJECT**

Given the need to develop an assessment of educational outcomes (7) and the benefits that can be gained from seeing what others have accomplished in developing programmatic assessment plans, the researchers embarked on a descriptive study of the programmatic assessment practices at U.S. schools and colleges of pharmacy. Many good pharmacy scholars are making well-guided “stabs” at assessment. Pharmacy educators owe a debt of gratitude to those pioneer scholars, namely those at the FIPSE-innovator schools.

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1For the sake of brevity, schools and colleges of pharmacy will be implied by the use of the term “schools” for the remainder of the manuscript.

2The FIPSE-innovator schools are the three schools of pharmacy (Purdue, Maryland, and St. Louis) that participated in a collaborative effort with AACP to extend initiatives currently underway nationally in schools of pharmacy to interrelate instructional and assessment strategies in order to insure continual progress of students toward the achievement of performance-based outcome abilities. This initiative was funded by the Fund for the Improvement of Postsecondary Education (FIPSE).
who have forged ahead in this arena and who have been willing to share their experiences and assessment frameworks. By gathering data on what all schools are doing this project aimed to develop an accurate representation of the variety of efforts being made without attempting to expound on the underlying reasons/philosophy for tool choice or program of assessment.

Research Questions
This project set out to answer the following research questions.
• Who is involved in programmatic assessment at schools of pharmacy?
• What drives the process of programmatic assessment at schools of pharmacy?
• Who has input into the process of programmatic assessment at schools of pharmacy?
• What is the prevalence of formalized outcomes and programmatic assessment plans among schools of pharmacy?
• What instruments are being used in programmatic assessment?

METHODS
The 80 U.S. schools of pharmacy were faxed a two-page questionnaire developed to elicit information (see Appendix). Deans were asked to complete the questionnaire and fax or mail their responses. The deans were instructed to forward the questionnaire within their schools if they deemed someone else to be a more appropriate person to complete the questionnaire. A second copy of the same questionnaire was faxed two weeks after the first questionnaire.

To preserve the authenticity of the data, respondents were not required to add their names. Responses could be faxed or mailed. Specific identifiers (such as originating fax number on the completed surveys returned by fax) were obliterated once the data were filed, to maintain anonymity. This prohibited an explicit nonresponse follow-up with the schools that had not sent a report of such combinations was not requested. Thus, it is possible that in schools without assessment committees per se much of the institutional assessment guidance comes from the curriculum committees.

Personnel Directly Involved in the Assessment Process
The individual approaches to assessment taken by schools may cover a wide gamut, including both top-down (essentially dictated by administration) and bottom-up (determined completely by direct participants such as faculty and students) approaches. To evaluate what types of structure surrounded personnel who are involved in assessment practices, several questions were asked regarding committee involvement, committee composition, and faculty or staff whose time was dedicated to assessment efforts.

Nearly all (98 percent) of the schools had a curriculum committee in place. Only 49 percent indicated that they had an assessment committee. Some respondents indicated that the two activities (assessment and curriculum guidance) are combined in the work of a single committee at their institution, but report of such combinations was not requested. Thus, it is possible that in schools without assessment committees per se much of the institutional assessment guidance comes from the curriculum committees.

One benefit of committee involvement is the opportunity to include a variety of perspectives. The perspective of an administrator may be different than that of a practicing faculty member; and that of a preceptor or practitioner alumnus is likely to vary somewhat from the perspective of a student who is in the throes of the curriculum. Schools often include individuals from a variety of associated roles to serve on these committees, so that varied opinions may be heard. Tables I and II depict the variety of perspectives represented on assessment and curriculum committees among the responding sample. The survey did not require respondents to indicate whether each of the above representatives is allowed voting privileges on curriculum and assessment issues; some members may be ex officio.

While not explicitly stated, it is a reasonable assumption that most of the committees were involved primarily with pro-

Table I. Composition among the 27 schools that had assessment committees

<table>
<thead>
<tr>
<th>Percent of schools with representative(s)</th>
<th>Number on committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>96</td>
</tr>
<tr>
<td>Administrator(s)</td>
<td>74</td>
</tr>
<tr>
<td>Student(s)</td>
<td>48</td>
</tr>
<tr>
<td>Practitioner(s)</td>
<td>15</td>
</tr>
<tr>
<td>Other(s)</td>
<td>22</td>
</tr>
</tbody>
</table>

Table II. Composition among the 54 schools that had curriculum committees

<table>
<thead>
<tr>
<th>Percent of schools with representative(s)</th>
<th>Number on committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>96</td>
</tr>
<tr>
<td>Student(s)</td>
<td>94</td>
</tr>
<tr>
<td>Administrator(s)</td>
<td>74</td>
</tr>
<tr>
<td>Practitioner(s)</td>
<td>59</td>
</tr>
<tr>
<td>Other(s)</td>
<td>9</td>
</tr>
</tbody>
</table>
grammatic assessment activities. One of the respondents reported an innovative approach to assessment at his/her institution. At this school, the teaching team for each professional year is responsible for the assessment of that year’s outcomes. This assessment style, examining one year of the curriculum, rather than one course only or the entire program overall, lies somewhere between programmatic and individual assessment.

To determine whether schools had personnel whose time was actually devoted to programmatic assessment activities, the following question was posed: “Does your school or college of pharmacy have one or more personnel positions (professional or staff) dedicated (greater than one-half time) to supporting assessment?” More than one in five (22 percent) respondents indicated that their institutions had personnel (professional or staff within their school) whose time was dedicated to assessment support. Of those, 50 percent had the equivalent of one full-time professional position (1.0 FTE) assigned to an assessment role. One respondent indicated that his/her institution had 1.5 professional FTEs involved in assessment. But 25 percent indicated that they had no professional personnel time involved in the activity. As for staff involvement, 42 percent of the institutions with dedicated within-school personnel had some portion of a staff position (0.5 or 1.0 FTE) committed to the assessment role.

Outside of the support that the school of pharmacy itself provides for programmatic assessment efforts, many of the universities, of which those schools are a part, also have assessment support available. Half of the respondents indicated that university-wide support for assessment did exist in the form of dedicated personnel positions. Indeed, “available” support does not necessarily imply “involved” support. This survey did not probe for indications of the extent to which university personnel were involved in assessment activities specific to the school of pharmacy.

**Presence of Formalized Outcomes/Assessment Plan**

A majority (71 percent) of the schools represented did have a list of general education abilities for their practice degree program. All of the respondents at schools with a list indicated that the list of abilities was approved by the faculty of the institution. The general educational abilities cited by respondents, along with frequency of their mentions are included in Figure 2. Data on professional abilities were not sought. This question pertains to “general” abilities only, largely because the number of general abilities is usually fewer, and more generalizable across institutions.

When these general abilities were collected and grouped by description or meaning, many could be categorized loosely into three domains, representing externally-influenced, internally-influenced, and technical aspects of a student’s complement of abilities. Some of the abilities seemed to fall somewhere in between, containing components of two domains. Presenting the complement of abilities in this fashion facilitates observation of the similarities between them, as they are described by the responding schools (with only slight editorial paraphrasing). While the unique professional abilities of a pharmacy graduate are not represented, the figure brings into two-dimensional perspective the image of a well-rounded pharmacy graduate who possesses a variety of general abilities. These are all admirable components of a preparation for not only a career, but for a lifetime of experiences.

Those abilities appearing in bold type in Figure 2 were mentioned by 10 percent or more of the respondents. It is apparent from these responses-and from observing the other abilities that were similar and those that enjoyed multiple mentions-that faculty members (or administrators) at several of the institutions used the CAPE Advisory Panel on Educational Outcomes report(8) to develop their general education abilities (or relied upon the innovator schools, whose faculty members may have relied upon the CAPE document)1. Some of the abilities listed by respondents as general education abilities (and included in Figure 2) appear to be more similar to abilities that other schools might distinguish as professional educational abilities rather than general ones (e.g., “pharmacy management,” “Pharmaceutical Care,” etc.). Responses from three schools were unable to be included in this collection of abilities, as the “abilities” that they listed seemed to be pre-requisite courses for entry into pharmacy school rather than general education abilities as defined in a fashion similar to the CAPE document.

In addition to a formal list of abilities, a formalized plan may be in place to facilitate programmatic assessment. Twenty-four (44 percent) of the 55 institutions responding indicated that they had a written plan of programmatic assessment at the time.

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1The general ability-based outcomes outlined in the CAPE Advisory Panel on Educational Outcomes Report are thinking abilities, communication abilities, responsible use of values and ethical principles, social awareness and social responsibility, self-learning abilities and habits, and social interaction and citizenship.
of the survey. Of those with a written plan, only 15 (65 percent) indicated that their plan had been formally adopted as policy. Specifics regarding that formal process leading to the formation of policy were not requested (i.e., respondents were not asked to indicate whether this policy was approved by a faculty vote, an approval by Board of Advisors, etc.).

Drivers of the Process
Respondents who indicated that their institution indeed had a written plan of programmatic assessment were asked to indicate “who” or “what” was driving the development of that assessment plan. Multiple sources were possible, and respondents were not asked to select a primary driver (i.e., they were asked to “check all that apply”). The distribution of mentions is represented in Figure 3.

The most commonly cited driver of the programmatic assessment process was the dean of the school (17 mentions, or 71 percent of the 24 schools with a written assessment plan). Also a popular response was “administrative officer other than the dean,” with 15 mentions (63 percent). Faculty were reported to be involved at more than half of the schools with written plans (13 mentions, or 54 percent). Less common drivers cited were ACPE (nine mentions, 38 percent), “accrediting body other than ACPE” (five mentions, 20 percent), unspecified “other” (four mentions, 17 percent), and students (three mentions, 13 percent).

Spectrum of Input into the Assessment Process
Who-aside from the administration-was involved in the assessment process in those 24 responding institutions with a formal programmatic assessment plan? The input actually came from a variety of sources. The ultimate beneficiaries of assessment efforts, students, were reported to be involved in 96 percent, or 23 of the 24 schools. Faculty members were involved in 92 percent, or 22 of the 24 schools. Three quarters (75 percent) of the schools involved preceptors, and 63 percent involved alumni. One in four (25 percent) of schools involved their state board of pharmacy in the programmatic assessment process. And 13 percent of respondents indicated that there was an unspecified “other” source of input to the process at their institution.

Instruments Used in Programmatic Assessment
No single template for applying instruments to programmatic assessment will be effective at every school of pharmacy. While many needs are similar among schools, each school also has specific needs that must be satisfied by the tools chosen to enable them to meet their assessment goals. As a result, some general, standardized instruments are being used, as well as school-specific instruments. This survey included an inventory of the instruments used for programmatic assessment, and collected information on when those instruments are administered and the data are used once they are collected. The implementation of those instruments is a complex issue, involving many aspects of choice and use. The two elements of time (when administered) and purpose (how data are used) were specifically explored. The results of that inventory are listed in Tables III and IV.

The entries in the rows of Tables III and IV include all reported instruments that were used by multiple schools. A few instruments that were used by a single school also were included as table entries (e.g., Myers-Briggs Type Indicator®). These were included because familiarity with these instruments is likely and the specific application in this context of programmatic assessment is likely to be of interest to many readers. Other instruments whose use was reported by a single institution have been included as notes in the tables.

DISCUSSION
Many schools of pharmacy are establishing frameworks for assessing their educational programs. And while many have

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Entry to Program</th>
<th>During program</th>
<th>Conclusion of program</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAPLEX (North American Pharmacy Licensure Examination)</td>
<td>0</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td>Watson-Glaser Critical Thinking Appraisal</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>PCAT</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Communication Apprehension Scale</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>LASSI (Learning and Study Strategies Inventory)</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Course Assessment</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>DiSC Personal Profile System</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Defining Issues Test (DIT)</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>CAAP Exams (College Assessment of Academic Proficiency)</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>California Critical Thinking Test</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Pharmaceutical Care Encounter Program (similar to Medicine’s OSCE)</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Myers-Briggs Type Indicator® (in Human Resources component of management class)</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Noel-Levitz Student Satisfaction Inventory</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Table III. Instruments used in programmatic assessment when administered to students

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Number of mentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noël-Levitz Student Satisfaction Inventory</td>
<td>00</td>
</tr>
<tr>
<td>California Board of Pharmacy Exam, exit assessments</td>
<td>00</td>
</tr>
<tr>
<td>Foreign Pharmacy Graduate Equivalency, post-graduate assessments</td>
<td>00</td>
</tr>
<tr>
<td>(of future program needs every 5 years, and of self-perceived abilities every 3 years)</td>
<td>00</td>
</tr>
<tr>
<td>At two points (upon entry and during program) “oral communication/problem solving/written communication/group interaction” assessments</td>
<td>00</td>
</tr>
<tr>
<td>At two points (during and at conclusion of program) annual performance exam, a comprehensive exam, and student opinionnaires on curriculum</td>
<td>00</td>
</tr>
<tr>
<td>At all three points (upon entry, during the program, and at the conclusion of the program) “individually developed,” and “student self-assessments.”</td>
<td>00</td>
</tr>
</tbody>
</table>

Number of mentions
implemented abilities-based educational programs, there is still progress to be made. The next (and arguably necessary) step beyond developing a curriculum arranged around such structure would be to implement a structured assessment plan for evaluation of that curriculum. A need exists for support and educational initiatives that facilitate the implementation of successful assessment programs designed to suit pharmacy education.

Assessment Personnel

As deans and others continue to press the issue of assessment, the speed of progress is likely to increase. This survey reveals that at present few administrations have recognized a need for dedicating professional personnel to support these developments. The 22 percent who indicated that they did have “one or more personnel positions dedicated (greater than one-half time) to supporting assessment” may not all have interpreted “dedicated” in the same way. It is possible that some took “dedicated” personnel to mean faculty assessment committee chairs whose time is being consumed with this activity, or their clerical staff, whose time is likewise consumed. Other limitations to the data collected through this item include the potential for response bias because of desirability to have such a support structure in place. Also, some schools may have experienced a temporary dedication of staff support because of impending accreditation. Such specifics were not explored in this survey.

Other personnel involved at many schools are assessment committee members. Involvement on assessment committees among this pool of respondents appears to include primarily faculty and administration. Fewer assessment committees than curriculum committees involved students and practitioners. This is likely to change because assessment committees may benefit a great deal from the input from students and practitioners. The importance of these roles may not be perceived. Or perhaps the learning curve for assessment planning is perceived to be high. Regardless of the reasons, the value of the involvement of students and practitioners could be significant. Those persons may have an insightful perspective on what abilities are needed, and therefore can contribute to defining the abilities, which is often a task assigned to the assessment committee. (In some cases, the curriculum committees, which do seem to have more student and practitioner input in this sample, may be responsible for defining the abilities fostered by a program.)

Formalized Outcomes /Assessment Plan

Virtually all schools of pharmacy conduct assessment activities on some level, because all have course grades and course evaluations (both are forms of individual course assessment). But do many schools have an overarching framework (implicit or explicit) in place that is not connected to individual courses, that is separate from course progression assessment? In fact, do most make the distinction between this course-level assessment and programmatic assessment? To improve the reliability of responses in that respect, a definition of programmatic assessment was provided on the survey instrument (“programmatic assessment is the evaluation of the institution’s entire curriculum or program to determine its effectiveness in meeting its educational outcomes”). It was encouraging to find that 44 percent of respondents did have a written plan of programmatic assessment. But this finding reveals the potential for further development at many institutions.

Indeed, having a written plan does not necessarily imply that implementation of that plan will be smooth or simple. One could reasonably support the notion that an assessment plan that had been approved by faculty would experience more ready acceptance upon implementation. Only 15 of the 55 of the respondents reported having a formally adopted a written programmatic assessment plan. Perhaps more widespread “buy-in” orchestrated through approval by those involved—at least by faculty—may facilitate assessment efforts in schools of pharmacy.
Process Drivers

Responses indicated pressure from a variety of driving factors to develop programmatic assessment plans. Members of administration (“dean” and “other administrative officer”) were the most frequently mentioned drivers of the programmatic assessment process. This is no great surprise. Yet, it was interesting to find that faculty members were considered “drivers” and not just participants at over half of the schools with written plans for programmatic assessment. “How” these entities drive the process was not collected.

One in every eight schools with a formal plan reported that students are considered a driver of the development of that plan. While students certainly can provide valuable input for the process, this survey did not collect information as to how that input was collected for those schools where students were reported to be drivers. The students’ input may be collected formally, or only anecdotally. Are students “involved” only because they participate as subjects? Or are they actually involved in the development of the assessment plan? These questions were not answered by this study.

Instruments

The variety of instruments used for programmatic assessment in the responding schools of pharmacy includes seemingly sparse use of performance-based assessments, which are recommended for health care professionals(9). It seems that the assessment instruments being used are standardized tests that are geared toward general abilities. This could be due to the fact that respondents were asked to list the general education abilities and then list assessment instruments employed at their institutions. Or it could be an indication that much progress is needed in the area of performance-based assessment and in the assessment of professional abilities.

While not an assessment of a specific ability, it is interesting that measures of student satisfaction are being taken. Few would argue with the point that students’ satisfaction with their educational experience is important. But it is difficult to link global satisfaction with specific abilities.

Five respondents indicated that they use NAPLEX scores for individual student improvement at their schools. The manner in which that is accomplished was not indicated; a description of this process would be valuable. The nature of using assessment measures for individual improvement implies additional contact with the student, and NAPLEX scores typically come to the institution after graduation and without specific identifiers. Perhaps those institutions use sample NAPLEX questions as tools for learning and student improvement.

Areas for Future Research

This survey explored a vast subject in a cursory fashion, limited intentionally to improve response by making the questions manageable. But in the course of the exploration, many windows for additional questioning were made evident.

For example, the instruments that are being used for assessment in many of the U.S. schools of pharmacy are described in this paper. This project did not aim to describe or discern the validity of using these instruments for assessment of abilities. In other words, the investigators did not attempt to determine if faculty members at the reporting schools evaluated whether the instruments measure what they think that they measure. Thus, it would be hazardous for the reader to assume validity of these instruments in the context of pharmacy education. Further research is needed (on pooled data, to supply a large enough database) to determine validity and reliability of the instruments in this context.

Again, to keep this initial investigation simple, it was limited to examination of general abilities (which are more global, making common elements of assessment more likely). An opportunity for future research would be to examine the professional abilities and the assessment of those abilities. A compilation of performance assessment measures, which might be used for evaluating professional abilities, would serve as a useful shared resource for pharmacy educators. Where commonality exists in these abilities, schools could certainly benefit from the assessment experiences of others. Currently, there are many questions and few answers in that area.

Further exploration should not be limited to examining practices within pharmacy alone. Much can be learned from those in related disciplines who are more advanced in their development of assessment processes (medicine, dentistry, psychology, education, etc.). By looking beyond our immediate “peer group” of schools of pharmacy, and by sharing within that “peer group,” much can be learned from each other, moving each of us forward in the assessment journey. The process of programmatic assessment is cyclical and dynamic. Even in the most refined and progressive institutions, there is always room for programmatic improvement. Along with this comes the need to assess programmatic effectiveness with regard to student learning, and there certainly is room for improvement in the processes necessary to accomplish this endeavor.

References

(7) Op. at. (2).

APPENDIX

Schools and Colleges of Pharmacy Assessment Practices Questionnaire

This questionnaire was created to elicit information that can be used to develop an accurate description of current programmatic assessment practices within U.S. schools and colleges of pharmacy. Your responses will be kept confidential and any identifiers will be removed. Please respond at your earliest convenience. Your participation is needed to ensure an accurate description and, of course, will be greatly appreciated.

Demographics

1. How many pharmacy students are enrolled at your school or college of pharmacy?
2. What is the status of your school? Public Private
3. When was your last accreditation visit by ACPE?
   Month Year

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4. Has your school chosen to be held to the ACPE Standards adopted in 1985 or 1997 for your next accreditation visit from ACPE?  
   __ 1985  __ 1997

5. What entry-level professional degree(s) is/are granted at your school or college of pharmacy and in what format?
   Professional Degree(s)  Format used by most students
   ___ PharmD  ___ 0.5 or 0.6
   ___ BS Pharmacy  ___ 1.4 or 1.5 
   ___ both  ___ 2, 3 or 2, 4

6. Do you have a Curriculum Committee?  ______ Yes  ______ No
   If YES: What is its composition?
   Number on Committee
   Faculty  _____
   Students  _____
   Practitioners  _____
   Administrators  _____
   Other (please specify)  _____

7. Do you have an Assessment Committee?  ______ Yes  ______ No
   If YES: What is its composition?
   Number on Committee
   Faculty  _____
   Students  _____
   Practitioners  _____
   Administrators  _____
   Other (please specify)  _____

8. Does your university or college have one or more personnel positions (professional or staff) dedicated (greater than one-half time) to supporting assessment?  ______ Yes  ______ No

9. Does your school or college of pharmacy have one or more personnel positions (professional or staff) dedicated (greater than one-half time) to supporting assessment?  ______ Yes  ______ No
   IF YES: Number of FTEs: Professional  _____  Staff  _____

Curriculum
10. Does your school or college of pharmacy have a list of general education abilities for the practice degree program?  ______ Yes  ______ No
    IF YES: Have they been approved by the faculty?  ______ Yes  ______ No

Please list the general education abilities for your school or college of pharmacy:

Assessment (Evaluation of the institution’s entire curriculum or program to determine its effectiveness in meeting its educational outcomes)

11. Does your school or college of pharmacy have a written plan of programmatic assessment?  ______ Yes  ______ No
    IF YES: (If no please skip to question 12)
    a. Has it been formally adopted as policy?  ______ Yes  ______ No
    b. Who/what would you say is driving the development of the programmatic assessment plan at your school or college of pharmacy? (Please check all that apply)
       ___ Dean  ___ Students
       ___ Administrative Officer  ___ other than the Dean  ___ ACPE
       ___ Faculty  ___ Accrediting Body Other
       ___ than ACPE
       ___ Other (please specify)
    c. Which of the following are involved in the process of programmatic assessment at your school or college of pharmacy? (Please check all that apply)
       ___ Students  ___ Alumni
       ___ Faculty  ___ State Board of Pharmacy
       ___ Preceptors  ___ Other (please specify)
    12. Which of the following instruments do your students take, and when and how are the data used by your school or college of pharmacy?

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Upon entry to program</th>
<th>During program</th>
<th>Conclusion of program</th>
<th>For individual student improvement</th>
<th>For programmatic assessment</th>
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<tbody>
<tr>
<td>Watson-Glaser Critical Thinking Appraisal</td>
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<tr>
<td>Defining Issues Test</td>
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<td>Communication Apprehension Scale</td>
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