Survey of Prior Learning Assessment Practices in Pharmacy Education

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Nontraditional Pharm.D (NTPD) program directors were surveyed to determine the use of prior learning assessment (PLA) in NTPD programs. Eighty-four percent of the respondents reported using PLA for one or more purposes, including the admissions process and the awarding of advanced standing for didactic and experiential courses. Transcript review, faculty-developed exams, and portfolios are the most commonly used methods of PLA in NTPD programs.

INTRODUCTION

Pharmacy education is witnessing a revolution in how and to whom it delivers its educational programs. Pharmacy practitioners, many of whom have decades of rich and diverse experience, are encouraging mechanisms by which they can obtain the skills and knowledge imbedded in the Doctor of Pharmacy degree while maintaining their full-time professional practice. Prior learning assessment (PLA) may be one of those mechanisms. PLA is the method by which adults receive academic credit for prior learning (1). Pharmacists, like most other adult learners, cannot afford the luxury of attending college on a full-time basis for advanced education.

Colleges and schools of pharmacy are responding to practitioner demands for advanced education by developing nontraditional PharmD programs (2). These programs enable baccalaureate-trained pharmacists to return to school on a part-time basis and obtain the Doctor of Pharmacy degree. Many of these programs employ distance learning techniques and flexible course scheduling (2). Pharmacy educators are also respectful of the knowledge and skills that these practitioners bring to the academic setting. Adults learn throughout their entire lives, and they learn in a variety of contexts and situations. They may seek formal learning through classroom situations, seminars and conferences or through individual self-directed learning, such as reading. Experiential learning is one of the most powerful and common methods by which adults continue learning outside the academy. Experiential learning is when learners are immersed in real-life situations in professional settings, and reflect on the experience to develop and build new skills, attitudes, and ways of thinking (3). The key to experiential learning is reflection and change. Individuals may learn from experience, but it is not automatic. In order to learn from experience, the individual must be receptive to new ideas and practices. Wagemans and Dochy observe that some adults may have a difficult time in learning from experience because they cannot free themselves from previous routines and practices, and from the standards and values they have acquired earlier (4).

Adults returning to the academic setting come with motivation, drive and expectations. In addition, they are goal-driven and are often motivated by specific job-related objectives (5). The demands on their time are great. They do not have the time or the patience to attend traditional classes learning materials that they may already know, and in some cases, could teach. Practitioners are requesting advanced standing or academic credit for what they already know. Pharmacy educators, in response to practitioners' requests and recognizing the various methods and contexts of learning, are seeking methods and mechanisms by which practitioners are recognized for their knowledge and skills gained from their years of professional experience.

The concept of prior learning assessment has been pioneered and brought to educators' attention through extensive efforts on the part of the Council of Adult and Experiential Learning (CAEL). CAEL has set standards for good PLA practice and has worked individually with many schools and universities to develop policies, procedures, and practices to allow adult students to get credit for what they know (1).

There are several assumptions underlying the concept of prior learning assessment. One is that college credit is not awarded for life experience. College credit is awarded for life learning (1). Learning is commonly defined as knowledge gained, new competence in specific skills, or as changes in attitude or affect.

Another assumption is that prior learning assessment can be

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used in multiple ways. It can be used to determine prerequisite knowledge in order to determine readiness for admission to a program or a specific class. Alternatively it can be used to enable the student to receive advanced standing in either didactic or experiential courses (course requirements waived).

It is not clear how PLA is used in pharmacy education and if its uses are similar to other academic disciplines. Therefore, the objective of this study is to survey and describe the mechanisms and use of PLA in pharmacy education.

BACKGROUND
To provide context for prior learning assessment in pharmacy, a brief review of prior learning assessment practices in higher education in general is described. Recently CAEL surveyed each of the 3,694 accredited post-secondary institutions in the United States. The survey had a forty-seven percent response rate. CAEL collected data on the uses and methods of prior learning assessment. These methods include standardized examinations, departmental examinations (faculty developed examinations), American Council on Education recommendations on military education and training, and corporate training, portfolio assessment, interview, and competence demonstrations. The responses to the survey represented a wide range of types of institutions and geographic areas. By far, the majority of the institutions responding to the survey (86 percent) reported assessing prior learning through at least one of the methods outlined in the survey. This represents a substantial increase since the last comprehensive survey in the 1970s(6).

The majority of respondents reported that PLA was used for general education, major and minor requirements, associate and baccalaureate degrees. Only eight percent of the responding schools indicated that credit awarded through PLA can be used to fulfill requirements for graduate degrees(6). Acceptance of PLA at the graduate level is not as commonplace as it is for the undergraduate level. The six regional accrediting associations in the United States have varying policies regarding PLA at the graduate level, with two associations prohibiting it altogether (New England Association and the Southern Association)(7). CAEL, among others, have been encouraging the use of PLA in graduate programs. They argue that since so many Masters degrees are oriented toward the practitioner (business, nursing, social work, public administration, to name a few), and many of the students enrolled in these programs are working professionals, it is logical and efficient to assess the knowledge and skills these students bring to the classroom and award them advanced standing when appropriate. On the other hand, others argue that experiential learning is limited by its practice orientation and lack of theoretical foundation(8).

The CAEL study found that examination is the most common method of assessing prior learning. Ninety percent of the responding schools used College Level Examination Program (CLEP) to award credit, 89 percent used Advanced Placement examinations, and about half of the responding schools used Defense Activity for Nontraditional Education Support (DANTES) examinations. About half of the respondents reported that students may seek advanced standing through portfolio assessment(6).

Awarding academic credit via examination has a long tradition in higher education. Portfolio assessment, on the other hand, is a relatively new phenomenon. This is the mechanism by which adults may obtain college credit for life experience and learning. Portfolios are typically a collection of documents, letters of verification, and essays describing experience and learning. A recent estimate in the Chronicle of Higher Education suggests that there may be 700 to 1,000 institutions that award academic credit or advanced standing through portfolio assessment(9).

National surveys, such as the ones described above, are one method of determining the level of prior learning assessment occurring in American higher education. But as the response rate suggests, it is difficult to obtain a comprehensive picture of PLA practices. However, these surveys do suggest that PLA is becoming more commonplace in American higher education and that portfolios are one viable method of awarding credit for life experience and life learning.

PLA: Education in the Professions
Prior learning assessment has been used by other professions. Four were selected for this review: nursing, law, osteopathic medicine, and architecture. Nursing was chosen because of its recognized expertise in and recognition of PLA. Law, osteopathic medicine, and architecture were chosen randomly to provide a more broad-based review of professional education. These professions' use (if any) of PLA provides a context for our examination of PLA in pharmacy education. This method is not intended to be an exhaustive review of PLA in professions' education. Accreditation standards were reviewed and interviews were conducted with key leaders in the professions. While this method is certainly not inclusive, it suggests how various professional academic programs are addressing PLA.

Nursing is probably the most similar to pharmacy in that it has witnessed a change in degree standards for the profession (registered nurse to bachelors of science in nursing). In addition, expanded practice opportunities often occur as a result of additional education and/or certification. The American Association of Colleges of Nursing (AACN) has drafted a position statement on educational mobility. This statement defines education mobility as a process by which individuals complete formal and/or informal educational offerings to acquire additional knowledge and skills. To the extent possible, education mobility should build on previous learning without unnecessary duplication of that learning, and be focused on outcomes(10). This statement supports the use of prior learning assessment. Ms. Rebecca Rice from AACN said that the nursing profession supports the removal of unnecessary barriers to academic degrees and has supported PLA for over twenty years. The nursing literature in both the United States and Great Britain has numerous examples of the successful use of prior learning assessment using a variety of methods(11-15). Dr. Joan Creasia, Dean of Nursing at the University of Tennessee, was instrumental in crafting the AACN statement on educational mobility. She commented that typically standardized exams and faculty-developed exams are used to assess prior learning for academic course waiver. Course transfer via transcript review is also another common mechanism. Some of these exams may include a live demonstration component. Credit for prior learning is awarded at the baccalaureate level as well as the master's level, and student fees are assessed for the examinations.2

Ms. Rice noted that the profession is now moving away from assessing prior learning for academic credit and is simply focusing on outcomes. If students can master upper level courses, then colleges assume they have the prerequisite skills and do not assess prior learning. Upon completion of the upper

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2 Personal communication, December 17, 1998, Joan Creasia, PhD, Dean, School of Nursing, University of Tennessee.
level course, then credit is awarded for prerequisite course. Students are interviewed extensively to determine their level of skill and are given ample support and intervention to assure success in the upper level coursework. Other professions do not utilize prior learning assessment. The American Bar Association accreditation standards explicitly state that all credit for the JD degree be earned after matriculation into an accredited law school(16). According to the American Osteopathic Association (AOA), their standards do not address prior learning assessment, but do state that four years of coursework must be completed at an accredited osteopathic medical school in order to be licensed.

The profession of architecture is more complex. The National Architectural Accrediting Board indicated that about two-thirds of the states require a professional degree in architecture for eligibility for licensure. Other states do not require the degree. Accreditation standards do not address PLA, and the practice of PLA is left up to the individual school. Conversations with the Association of Collegiate Schools of Architecture suggest that PLA is not currently a topic of much discussion. Our review of the literature in pharmacy education led us to the University of Maryland School of Pharmacy(5,6)(17). Faculty at Maryland developed an extensive portfolio process by which students may petition for advanced standing for a limited number of specific didactic and experiential credits. University of Maryland allows students to transfer in courses completed elsewhere, but the majority of their students’ advanced standing is by portfolio review. They do not evaluate PLA by examination. Faculty at University of Maryland spent a considerable amount of time laying the foundation for prior learning assessment via portfolio. They developed criteria and competency statements, and defined what kinds of documentation would be appropriate for each competency. There was considerable practitioner involvement at this stage. A course was developed to assist students in developing their portfolio. Extensive written documentation is also available to the student and to the faculty to guide them in evaluation. They adhere to the standards for good PLA practice developed by CAEL(7).

Standards of Good Practice

Pharmacy educators, cautious of “giving away credit,” adhere to strict and high standards of prior learning assessment practice. Standards of good practice in PLA have been clearly defined by Whitaker in his publication “Assessing Learning: Standards, Principles & Procedures”(1). This CAEL publication built on the work of Warren Willingham(18) and Susan Simosko(19) and systematically organized principles and procedures of PLA. This book was developed in response to rising interest in PLA, the growing number of adult students in higher education, and a desire for greater accountability to consumers of higher education(1). The standards were developed after two years of intensive interviews with hundreds of learners and educators. Those standards are:

1. Learning outcomes or objectives need to be clearly defined.
2. Criteria for success need to be clearly defined.
3. Learning must be verified or documented.
4. Learning must be at college-level.
5. Learning should be balanced, i.e. appropriate to the subject matter, between theory and practical application.
6. Review must be done and awarding of credit must be made for appropriate subject matter and by academic experts.
7. Credit should be appropriate to the academic context in which it is accepted(1).

Perhaps the single most important criteria for good practice is the first standard, i.e., learning outcomes or objectives need to be clearly defined. Pharmacy educators collectively and individually at the program level, have deliberated on the outcomes and objectives of pharmacy education. In order to appropriately assess prior learning and match it with specific courses, it is imperative that objectives and learning outcomes are articulated and communicated to students.

METHODS

A questionnaire was developed to survey the methods of PLA used in pharmacy education. Based on the literature, the methods of PLA are defined below for the purposes of this study.

Portfolio Review. The student prepares and presents a written document that reflects on and documents experiences, and the learning that occurred from those experiences. Typically portfolios require a narrative or essay, letters of verification, copies of certificates earned, in-services prepared, evaluations of those in-services, publications, job descriptions and performances reviews.

Standardized Commercial Available Exams. These are frequently competency-based exams developed by organizations or associations that are widely recognized and accepted by the profession. An example is the Board of Pharmaceutical Specialty exams.

Exams Developed by College Faculty. These are exams developed by college faculty to evaluate prior learning with regard to a specific competency or outcome. These are often referred to as challenge exams.

Transcript Review. Transcript review typically requires a student to present a transcript, course descriptions and syllabi, or other supporting documents of courses taken at other academic institutions for review. If the objectives appear comparable to the objectives of the course at the university, then the student requirement is waived.

Nonacademic Course Review. These are courses taken by pharmacists outside of a formal academic setting. Examples may be the American Society of Health-Systems Pharmacists course on Drug Information or Clinical Skills or the American College of Clinical Pharmacy PSAP courses. They may also include continuing education courses, employer-offered programs, certificate programs, and intensive-training institutes.

Others. This includes interviews, performances, and demonstrations to assess prior learning and to determine if credit would be awarded.

1 Personal communication, December 7, 1998, Ms. Rebecca Rice, Deputy Director, Colleges in Caring Project, American Association of Colleges of Nursing, One Dupont Circle NW, Suite 530, Washington, DC 20036.
The first section of this study’s questionnaire included questions on the use of PLA in the admissions process. The six PLA methods described above were presented and respondents were asked to describe how the methods were used to evaluate candidates for admission. This section also included a series of questions asking that for each method used to describe: (i) how many students attempted the method per year; (ii) how much faculty time is necessary to administer/evaluate the method per student; (iii) how much support staff time is necessary to administer/evaluate the method per student; (iv) who defines the outcomes or criteria to be assessed; (vi) what are the costs to the student to use this method; and (vii) how many students are successful in this method per year.

The second and third sections of the questionnaire asked the same questions presented in the first section, but relating to their application for advanced standing in didactic and/or experiential courses. The fourth section asked questions regarding faculty development to implement PLA such as “who developed the training program?” “how long did it take to develop the training program?” The fifth section asked respondents to evaluate their prior learning assessments against the CAEL Standards for Good Practice. The final section asked for NTPD Program information including the number of students enrolled and the number of NTPD graduates. The questionnaire was pilot tested with a small group of pharmacy faculty and revised as needed.

A variety of resources were used to identify nontraditional PharmD (NTPD) programs and their directors (pharmacy program’s marketing materials, web sites, telephone calls to colleges, AACP web site). This search resulted in 38 known or possible NTPD programs as of January 1999. Questionnaires were mailed to directors of each program on January 15, 1999. The initial data collection phase resulted in 14 responses. Follow-up with non-respondents was performed by e-mail, fax and telephone. This resulted in 15 additional responses, for a total of 29 programs. Four respondents returned their questionnaires uncompleted since their programs had yet to enroll students or address the use prior learning assessment. The remaining 25 responses were deemed usable for data analysis. The response rate of the study was 76 percent.

Data from the survey were entered into a SPSS database. NTPD program directors were contacted if responses were unclear. Analysis of the data occurred using descriptive statistics.

RESULTS
Twenty-one of the 25 programs (84 percent) utilize prior learning assessment (PLA) for at least one purpose in their NTPD program (satisfaction of admission requirements, advanced standing for didactic courses, advanced standing for experiential courses). Nine programs use PLA for two of these purposes, while four programs utilize PLA for all three purposes (See Figure 1).

Seven programs (28 percent) use PLA to determine if applicants have satisfied admissions requirements. All seven programs utilize transcript reviews, while a number also use faculty developed exams, nonacademic course reviews, and other PLA methods (e.g., interviews, personal essays, letters of recommendation). No program reported using commercially available exams (i.e., GRE, NAPLEX, board certification exams) to assess applicants prior to admission (See Figure 2). Transcript review was the mechanism used most frequently. Five of the programs provided information regarding their use of transcript review. Each program reviews an average of 32 transcripts from NTPD students requesting admission to their program (median=14, range 8-75). An average of 26 students are successful in their request (median=14, range 4-75) using this method. Each transcript takes an average of 4.3 hours of faculty time (median=1 hour, range 0.1-12 hours) and 1.1 hours of staff time (median=1.25 hours, range 0-2 hours) to review. Programs charge their students an average of $20.60 per transcript reviewed (median=$8, range $0-$60). A description of the PLA methods used in the admissions process and the programs that use them are presented in Table I.

Use of PLA for Advanced Standing for Didactic Courses
Sixteen NTPD programs (64 percent) utilize PLA to evaluate student requests for advanced standing for a didactic course. Most programs utilize transcript reviews to determine if a student has received credit for a similar course from anoth-
Table I. PLA methods used in the admissions process (n = 7)

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<td>Portfolio</td>
<td>Descriptions of career goals, presentations, clinical pharmacy activities, and professional achievements are reviewed by the Admissions Committee to determine admission into the program.</td>
<td>Idaho State North Carolina</td>
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<td>Commercial exams</td>
<td>Not used for admissions</td>
<td>None</td>
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<td>Faculty exams</td>
<td>One program uses a pharmacokinetics exam that was developed by their faculty. Students must pass the exam for admission into the program. Another program requires a three-hour comprehensive examination, which tests students’ clinical pharmacy knowledge base for admission into the program.</td>
<td>Idaho State Wisconsin</td>
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<td>Transcript review</td>
<td>Programs review transcripts to ensure that the applicant has met minimum requirements for admissions. Some programs require a B.S. in pharmacy; others have specific course and minimum GPA requirements. Some programs look at grades received in specific undergraduate pharmacy courses.</td>
<td>Idaho State Kansas North Carolina Purdue West Virginia Washington/WSU Wisconsin</td>
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<td>Nonacademic course review</td>
<td>Several programs evaluate participation in training programs in clinical pharmacy. Participation is also seen as an indication of motivation to learn.</td>
<td>Idaho State Kansas North Carolina</td>
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<td>Others</td>
<td>Programs also use personal essays, interviews, and letters of recommendations when reviewing applicants for admissions.</td>
<td>Idaho State Kansas Wisconsin</td>
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Fig. 4. Methods used to evaluate requests for advanced standing for experiential courses.

er academic institution. Faculty-developed exams, portfolios, nonacademic courses (e.g., continuing education, corporate training, certificate programs), and commercial exams are also frequently used (see Figure 3).

Programs use a variety of methods to evaluate these requests. Eleven programs provided information regarding their use of transcript reviews. Each program reviews an average of 11 transcripts from NTPD students requesting advanced standing for didactic courses (median=4, range 0-75). An average of seven students are successful in their request (median=4, range 0-45) using this method. Each transcript takes an average of 1.2 hours of faculty time (median=0.75 hours, range 0.25-4 hours) and 0.6 hours of staff time (median=0.5 hours, range 0.2-1 hour) to review. Programs charge their students an average of $5.71 per transcript reviewed (median=$0, range $0-$25).

Eight programs provided information about faculty-developed exams used to evaluate didactic advanced standing requests. Each program administers their exams to an average of 4.4 students (median=2, range 0-14). Each exam takes an average of 4.3 hours of faculty time (median=5.0 hours, range 1-7.5 hours) and 0.75 hours of staff time (median=0.75 hours, range 0.5-1 hour) to develop and grade per student. Programs charge students an average of $101 per examination (median=$100, range $25 - $200). Table II describes the use of the various methods of PLA for advanced standing for didactic courses and the programs that use them.

Use of PLA for Advanced Standing for Experiential Courses

Fifteen programs (60 percent) use PLA methods to evaluate student requests for advanced standing for an experiential course (e.g., rotation, clerkship). Twelve programs utilize portfolios in which students describe their relevant skills and experiences. Programs also use a number of other methods to assess if students have the competency to have these courses waived, including interviews, oral exams, past experience as a preceptor, and Nine of the programs provided information regarding their use of portfolio reviews. Each program reviews an average of 17 portfolios a year (median=5, range 0-75). An average of 11 students are successful in their request (median=4, range 0-70) using this method. Each portfolio takes an average of 5.2 hours of faculty time (median=6 hours, range 0.5 -10 hours) and 0.8 hours of staff time (median=0.5 hour, range 0-2 hours) to review. Programs charge their students an average of $220 per portfolio reviewed (median=$75, range $0-$895). See Table III for a description of the methods of PLA used for advanced standing for experiential courses and programs that use them.

Faculty Issues

All but three programs that use PLA utilize their faculty to develop methods and perform assessments. The programs that use college faculty for PLA involve an average of 6.4 regular faculty (range: 3 - 14) and 2 adjunct faculty (range: 0 - 10). Four programs have developed training for their faculty to help
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<td><strong>Portfolio</strong></td>
<td>Portfolios are typically described as documents that describe and verify experience and learning. The portfolio demonstrates that the student can meet the objectives of a given course. Portfolios may include evidence of pharmacy education, practice experience, CE certificates, results of commercial and faculty-developed exams, and personal essays. Portfolios may be reviewed by an individual faculty (course coordinator or director), faculty committee, or advisory committee. Some programs use a two-tier system in which an individual or group of faculty reviews the document and makes a recommendation to a standing college committee who then approves or disapproves the advanced standing request. The review may be based completely on the written portfolio or may be augmented by an oral exam, observation, or written exam.</td>
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<td>Commercially available exams (e.g., BPS Pharmacotherapy and specialty examinations) are used for advanced standing for didactic courses. Several programs grant students who are BPS certified advanced standing in therapeutics courses.</td>
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<td>Respondents typically said that faculty-developed “challenge exams” were used occasionally. Some programs stated that while they were an option, they had yet to be actually developed. One program noted that it would use an exam if the transcript review were inconclusive. Faculty-developed exam policies may include permission of the instructor, 70% or higher passing rate, and the exam must be on the level of the Board of Pharmaceutical Specialties exams.</td>
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<td>Some programs have specific requirements for transcript reviews (e.g., course must be at the graduate level and/or student must have received a grade of B or better). Typically students initiate the transcript review process. However, one school automatically reviews all transcripts for advanced standing as a matter of procedure. Requirements may include that students submit a petition, transcript, course description, and syllabus. This information is then commonly referred to the content expert faculty for review. Some programs forward the faculty’s recommendation to a faculty committee for approval; others administratively act on the faculty’s recommendation.</td>
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<td>Several programs accept nonacademic courses for review of prior learning assessment. Two programs noted that they accept the ASHP Clinical Skills Drug Information Modules and a written drug information consult for advanced standing for their Drug Literature Evaluation courses. Other programs noted that they would consider BPS workshops and other CE courses or certificate programs. Programs may require certificates of completion, course syllabus, and other supporting documentation. Individual course coordinators may review the documents and award advanced standing and/or committees may be involved in the review and approval.</td>
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<td>One program noted that they use an on-line interview as a method of assessment. Another program noted that they use other methods as part of a portfolio, but did not specify what those methods were.</td>
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them assess prior learning of their NTPD students. These training programs have been developed by NTPD directors, outside experts in PLA, or by college faculty. They are usually offered to groups of 5 - 10 faculty members on an as needed basis. They typically take 4 - 6 hours to develop and 1 - 2 hours to administer, although one program reports spending over 100 hours to develop a program that takes 4 - 6 hours to administer.

Nineteen of the 21 programs that use PLA give their faculty oversight regarding the development and approval of PLA methods. This oversight usually occurs by an NTPD oversight committee, a college curriculum committee, or by the college faculty as a whole. Fourteen NTPD programs...
Table III. PLA Methods used in the evaluating advanced standing for experiential courses (n = 15)

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<td>Portfolio</td>
<td>Portfolios for experiential courses contain examples of work, letters of verification, continuing education certificates and other documents that verify continued learning. An experiential learning essay is commonly an integral component of the portfolio. This essay describes the work experiences of the student and the learning that has occurred from these experiences. Some programs give students rigorous instructions and a specific format to facilitate the development of the portfolio. The evaluation process may include review by experiential education staff, individual faculty or preceptors, and/or faculty committees. Typically the reviewers attempt to match the learning documented in the portfolio with the competency statements or objectives of the rotation. Interviews, case presentations, and/or an oral defense may be required for clarification or further verification of the learning noted in the portfolio.</td>
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<td>Commercial exams</td>
<td>While three programs noted that they consider commercial exams, only one stated that they gave credit for experiential courses based on successful completion of the BPS Pharmacotherapy exam. Other programs noted that commercial exams are included in the portfolio.</td>
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<td>Faculty exams</td>
<td>Three programs use faculty-developed exams for PLA for experiential courses. One noted that they use faculty-developed exams only if other assessments (portfolio and transcript review) are inconclusive. Another noted that they use faculty-developed exams as an optional component of the portfolio review. A third noted that this is an option for PLA for experiential courses, but it has not yet been developed.</td>
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<td>Transcript review</td>
<td>Three programs described transcript review as a process for PLA for experiential courses. Two programs examine transcripts with supporting documents. One other program noted that transcript review was part of the portfolio review process.</td>
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<td>Nonacademic course review</td>
<td>Several programs noted that they grant advanced standing for rotations for participating in selected continuing education certificate courses. One course noted in particular was diabetes courses accompanied with a practice experience (e.g., CDE).</td>
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<td>Others</td>
<td>A number of programs used “other” methods to assess PLA for experiential education. The most common method noted was completion of an ASHP accredited pharmacy residency program. Another method described in this category was being a preceptor. In other words, if you were a preceptor for a particular type of clerkship, then you would receive credit or waive out of that clerkship. Other programs noted special projects like the development of clinics etc., but these projects were described and incorporated into the portfolio. (In one case, a student could present a letter of waiver request. This letter would contain information about the experience targeted toward specific criteria. However, the student waived from the required rotation must substitute a like-site elective clerkship.)</td>
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Administrators have oversight of the PLA methods used in their programs, but only five programs report that their college of pharmacy administrators are involved in evaluating and approving their PLA methods. Only one program stated that their PLA methods must be approved at the university level.

Standards for Good Practice

Program directors were asked to self-assess their PLA practices with respect to the CAEL standards on a scale of 1 (never meets standard) to 10 (always meets standard). Fifteen of the 21 programs that use PLA provided responses to this section of the questionnaire. The CAEL standards and program ratings are as follows and are reported as the average response (See Figure 5).

According to the data provided by responding programs, most NTPD programs verify or document the evidence of prior learning provided by their students, and only award credit for prior learning that is relevant to their curricula. Most programs also have student evidence of prior learning evaluated by con-
On the whole, most programs reported that they adhered to the DISCUSSION
affected hundreds of NTPD students.

not several areas. The use of PLA in pharmacy education has
responded to the survey reported that they use PLA in one, if
grams, while maintaining academic integrity and rigor, are
ment to the health and well being of the profession. NTPD pro-
practitioners and responding to the needs of the profession.

applications.

student evidence of prior learning is not always at the PharmD
level, nor is it always balanced between theory and practical
applications.

DISCUSSION
Pharmacy education has a long tradition of collaborating with
practitioners and responding to the needs of the profession.
PLA is one more example of pharmacy education’s commit-
tment to the health and well being of the profession. NTPD pro-
grams, while maintaining academic integrity and rigor, are
responsive and respectful of the learning that occurs outside
the academy. Twenty-one of the 25 NTPD programs who
responded to the survey reported that they use PLA in one, if
not several areas. The use of PLA in pharmacy education has
affected hundreds of NTPD students.

Our analysis of the data suggests that pharmacy education
commonly accepts the use of transcript review for prior learn-
ing assessment. Many schools note that they use faculty-devel-
oped exams for PLA. However, several noted that exams have
not yet been developed. The use of portfolios, particularly for
experiential courses, is becoming more commonplace. Over
half of the programs that use PLA, use portfolios to review
advanced standing requests in experiential courses. This
method of PLA is gaining momentum in pharmacy education,
as it is in higher education in general.

Several programs also noted their faculty training pro-
grams and materials developed to assist students in PLA, par-
ticularly in portfolio development. Certainly the success of
PLA in pharmacy education is dependent on the clear under-
standing of PLA practices and good guidance to students.

On the whole, most programs reported that they adhered to the
standards of good PLA practice. One area of weakness was
providing evidence of prior learning balanced between theory
and practical applications. Programs did not note whether or
not the balance was in favor of practice or theory, but we sus-
pect, given the nature of the profession, the balance is on the
side of practical applications rather than theory-based learning.
This is one area of concern. One criterion for prior learning
assessment is that credit is awarded for college-level learning
(in this case, PharmD level learning). College-level learning
has been defined as having three qualities: (i) that it is concep-
tual; (ii) that it is generalizable and should be applicable out-
side the specific job setting in which it was learned, and (iii) it
is traditionally taught in academic programs(22). Pharmacy
educators need to be cautious and ensure that the learning
demonstrated, particularly in portfolios, needs to be at the
PharmD level, and not the baccalaureate level.

Comparison of Methods
The following section briefly compares the advantages
and disadvantages of each method described in this study,
based on the data collected.

Portfolio Review. Portfolios may allow the student to demonstra-
te the depth and breadth of his or her experience and match
those experiences with specific course goals and objectives or
competencies. Portfolios are being used primarily for experi-
mental courses. Of all the methods discussed in this paper, por-
tfolio review may be uniquely suited for experiential courses.
The success of a portfolio review may, however, rely on the
student's organizational and communication skills.

The disadvantages of portfolio review include both stu-
dent and faculty time. Students may spend several months in
writing the portfolio and collecting supporting documentation.
Evaluating the portfolio is also very time consuming for facul-
ty. Faculty need to develop specific competencies or outcomes
for courses so that the student may use that information as a
guide in writing the portfolio. This is also essential for the eval-
uation of the portfolio, which can be a time consuming process.
Another disadvantage to portfolio review may be the subjec-
tive nature of the evaluation. The results of this study suggest
that the success of portfolio review is linked to the rigor of
policies and procedures to guide both students and faculty in
the development and review of portfolios.

Commercial Exams. Commercially developed exams are rela-
tively easy to use for prior learning assessment and require lit-
tle or no faculty time to administer and evaluate. The exams are
usually psychometrically sound and have been found to be reli-
able and valid measures of defined domains and constructs.
Pharmacy examinations such as those prepared and adminis-
tered by the Board of Pharmaceutical Specialties are well
established and commonly accepted in the profession. The dis-
advantages of using these kinds of exams are that they may not
exactly match specific course or program criteria and they are
administered infrequently and at specific locations.

Faculty Exams. Examinations developed by faculty may be
tailor-made to match the objectives of specific courses. They
can be administered frequently and can be scheduled to accom-
modate students’ needs. They can be easily updated and
revised. However, faculty developed exams are resource inten-
sive. Many schools noted that they had policies and procedures
for PLA via faculty developed exams, but have not yet devel-
oped any exams. In addition, another disadvantage to this
method is the reliability and validity of the exam may be diffi-
cult to assess due to low numbers of test takers.

Transcript Review. The method of assessing prior learning via
transcript review is relatively easy and takes little faculty time.
However, it is difficult to gauge whether or not the course
taken previously is a good match to the specific NTPD course.
Transcript review is limited to traditional academic institu-
tions.

Nonacademic Course Review. Nonacademic courses may be
easily accessible and available to the student, there may be

Fig. 5. Self-assessment of good PLA practices (N=15).
minimal cost involved, and they require little or no faculty resources. On the other had, it is difficult to monitor the quality of nonacademic courses, and the outcomes may not match required academic courses.

CONCLUSION
An area we see underutilized in PLA in pharmacy education is the use of commercially available exams and certification. The Board of Pharmaceutical Specialties (BPS) has developed several exams, which result in certification that have been widely accepted by the profession and are psychometrically valid and reliable. Several programs use board certification in pharmacotherapy for advanced standing in therapeutics course(s). However, no program reported use of the other board certification exams such as psychiatry, oncology, and nutrition. These exams could potentially match specific course objectives at individual programs. In addition to BPS, the National Association of Boards of Pharmacy (NABP) has also developed exams to assess practice competencies. NTPD programs could take advantage of the resources available in pharmacy organizations and associations and utilize these new and established examinations and certifications.

Another area that we see underutilized is nonacademic courses (continuing education courses and corporate training). We expect that the new ACPE guidelines for certificate courses will increase the rigor and intensity of CE certificate courses, which potentially could match some NTPD course requirements. Several pharmacy associations such as the American Pharmacists Association, the American Society of Health-Systems Pharmacists, and the National Community Pharmacists Association have developed rigorous continuing education courses. It seems reasonable that some goals and objectives of CE courses could potentially match NTPD courses.

While PLA is being practiced in pharmacy and has potential for increased use, PLA has its disadvantages. Students who use PLA may be missing valuable learning opportunities. Portfolios, because of their heavy reliance on excellent writing and organization skills may disadvantage some groups of students. In a recent article, Larry Seid questioned whether or not the essay format of portfolios is the best measurement of experiential learning when specific competencies are to be addressed. He suggests that a more structured assessment model could increase access to the PLA portfolio process of students who did not possess good writing skills. Faculty may question the reliability and validity of various PLA mechanisms. Clearly, PLA is not a perfect solution, but educators need to weigh the advantages against the disadvantages.

This project has some limitations. Some programs did not respond to our survey. While we suspect that they may not use PLA, it is uncertain. Other programs have established PLA policies and procedures, but have yet to implement them, so their responses were limited. Interpretation of questions may have also been problematic. We attempted to balance between a user-friendly data collection instrument and depth and breadth of information.

PLA is a growing phenomenon in higher education and is being implemented in a number of NTPD programs. While NTPD programs will be eventually phased out as the accreditation standards change, pharmacists will continually need to re-tool and learn new skills. The future of the profession may require additional certification and re-certification. PLA may play a role in this process. In addition, what pharmacy education has learned regarding PLA may be applied to the entry-level pharmacy student as well.

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