

Converting a paper-based, progressive, reflective, longitudinal professional development student portfolio to an e-version and incorporating self-assessment of ability-based outcomes.

Judith Barr, MEd, ScD
Margarita Divall, Pharm.D., BCPS
School of Pharmacy, Department of Pharmacy Practice

What is a portfolio?

- An organized documentation of growth and achievement that provides tangible evidence of the attainment of professional knowledge, skills, and dispositions.
- A collection of evidence of both products and processes of learning. It attests to achievement and personal and professional development by providing critical analysis of its contents.

Why a Student Portfolio for Pharmacy?

- Personal, goal-directed, reflective, progression portfolio with connections to the learning and professional development processes (a curriculum of identity)
 1. Incorporate new science about how learning occurs and how to improve it (Learning about Learning)
 2. Incorporate new focus on the "reflective practitioner" in health profession education
 3. Student engagement -- connection to faculty member (National Survey of Student Engagement)
 4. Evolved to include documentation of Ability-Based Outcomes

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New Books: Neuroscience and Learning

David A. Sousa
HOW THE Brain Learns
 SECOND EDITION

Knowing what Students Know

A Celebration of **neurons**
 THE INDICATORS GUIDE TO THE BRAIN

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Contributions of Neuroscience to Learning

- Major messages from neuroscience studies
 - Incorporate active learning and collaboration
 - Incorporate meta-cognition (thinking about thinking) and reflection on learning experiences
 - **REFLECTIVE PORTFOLIO!!!!**
 - “Help students to take control of their own learning by defining learning goals and monitoring their progress in achieving them.” (National Academy of Science)
 - *Yearly professional development plan (PDP)*

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Student Ownership and Learning

- Student-centered assessment (e.g. Portfolios) CAN become a part of the “Culture of Learning”
 - Create a sense of “personal ownership” over one’s accomplishments...ownership promotes feeling of pride, responsibility, and definition.”
 - *Use a “self-regulated learning” model*
 - *Self-assessment of mastering competencies*

Paris SG et al. Becoming Reflective Students and Teachers with Portfolios and Authentic Assessment, Psychology in the Classroom, American Psychological Association, Washington, DC, 1999.

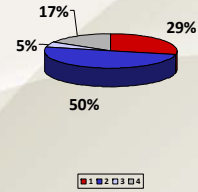
Reflective Learner

- The reflective learner can be seen as someone who explores their experiences of learning to better understand how they learn with a view of improving future learning – bedrock of lifelong learning
- Reflective learners are likely to be
 - More self-aware and self-critical
 - Motivated to improve
 - More able to carry through independent learning

- Oxford University

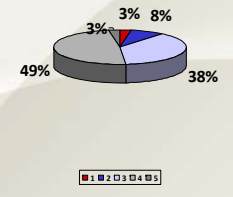
My school currently utilizes:

1. Paper portfolio
2. E-portfolio
3. Other type of portfolio
4. No portfolio



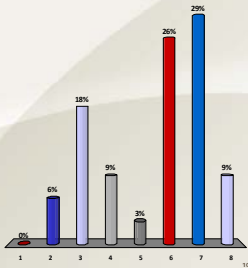
Portfolio is being used

1. Only for a specific course
2. Only for a specific year
3. Only on IPPE or APPE
4. P1-P4
5. Other



If you have a student portfolio, which of the following goals is (are) achieved in it?

- 1. Faculty-student interaction
- 2. Career/professional development
- 3. Tracking of competency achievement
- 4. 1 and 2
- 5. 1 and 3
- 6. 2 and 3
- 7. All
- 8. None



Application of Portfolios in the Pharmacy Program

- Intention is to facilitate professional development/socialization of students as well as student-faculty interaction
- Implementation was phased in over 5 years
- Elements of the portfolio process change as students progress in the program
- Assessments are guided by rubrics and are administered by faculty advisors

Northeastern University's PharmD Program

- Six year Doctor of Pharmacy Program
- Average professional year class size of 130 students
- Three 4-month Introductory Pharmacy Practice Experiences (Co-op)
- Capstone 36 weeks of advanced clinical experiences

Faculty Roles

- Course/seminar coordinators provide written guidelines to students
- Faculty advisors are assigned to and meet with students during draft and final stages – longitudinally follow student across the years
- Faculty provide guidance and professional advice
- Faculty complete assessments and provide information to students and coordinators

Student Reflections and Integrated Learning Models

- Review campus-based and experiential education and think about their inter-relationships
- Develop and refine professional goals and plans based on work experiences and faculty/preceptor input
 - Curriculum of identity
- Assess strengths and weaknesses and consider them relative to professional planning and improvement

Faculty Responses to the Portfolio Review Process

- Most faculty participate voluntarily and advise about 4-8 students per semester
- Some faculty meet with students in groups
- Several reminders are needed to ensure that students and faculty meet deadlines
- Faculty seem to enjoy the process
- Assessments will be used to guide future applications of the portfolio process

Why change to e-portfolio?

- Need for data aggregation of information in student portfolio
- Platform for student to document and chart progress towards achievement of Ability-Based Outcomes (ABOs)
- Campus-wide interest and e-portfolio demonstration project WITH university technical support

E-portfolio solutions

- In 2008 the Assessment Committee began to explore e-portfolio solutions
- Independently, the University charged the EdTech center to identify a platform for e-portfolio
- A University TaskForce went through a comprehensive exploration and identified TaskStream vendor for e-portfolio pilot

E-portfolio conversion

Section	Main components	Data collected
Personal Section	Picture and background info	Demographics
Career Section	Primary and secondary career goals and rationale	Form
	Career action plan with 3 activities for current year and 2 activities for each subsequent year	Template asks students why they chose the activity and what they learned from it
Professional Activities	Three professional activities that are tied to exploring career goals with reflections	Template for reflection; each activity can be linked to an ABO. ABO form asks students to self-assess any ABOs that were covered by professional activities

Pharmacy Professional Development Portfolio

Home

Year 3 deadlines and assessment

Year 3 Personal Goals

Year 3 Academic Section

Year 3 IPPE (Co-op)


Professional Activities

Author: Margarita DiVal
Last modified: 07/16/2009 09:41:07 AM EDT

TaskStream

Home

Overview of Northeastern Pharmacy Example



Margarita DiVal, PharmD, BCPS, Associate Clinical Professor, Northeastern University - Bouie College of Health Sciences School of Pharmacy Doctor of Pharmacy, Northeastern University (1999) Pharmacy Practice Residency, Beth Israel Dea Medical Center (1999-2000) BCPS Certification, 2001

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Pharmacy Professional Development Portfolio

Home / Year 3 Academic Section

Year 3 Academic Section

Overview of Year 3 Academic Section

Specified Standards

ABO achievement through course work

Directions for ABO achievement through course work

Specified Standards

File attachments:

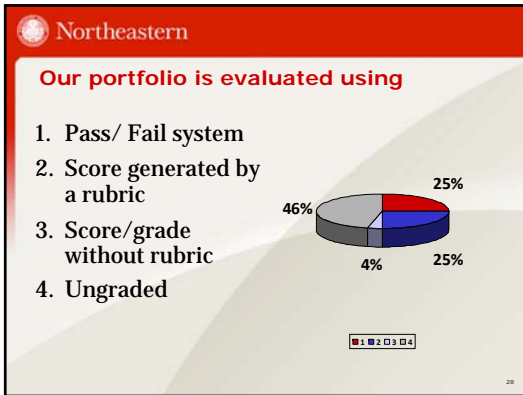
1. Paper: The paper is an example...
2. Web Page Search: This is the result of a literature search for my Hobbler Year 3 Linking Class paper. This demonstrates that I am able to utilize information technology appropriately to identify literature sources for my paper.

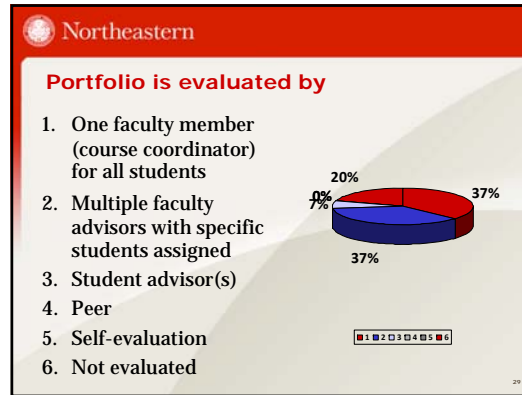
Form: ABO Self Assessment Form

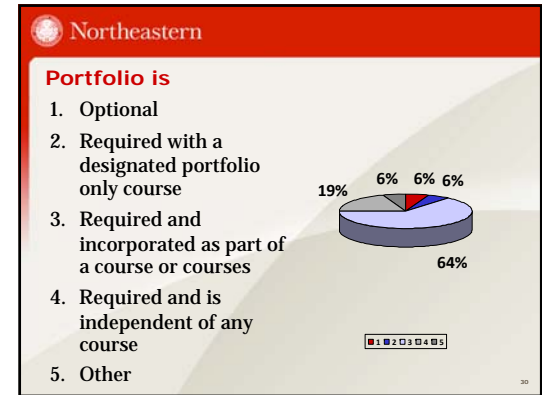
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Issues in portfolio evaluation

- Grade generated from a rubric vs. pass/fail
- Challenge of over 40 different advisors grading consistently







Issues in portfolio evaluation

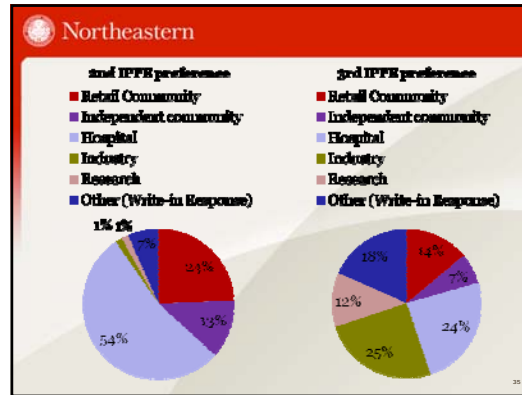
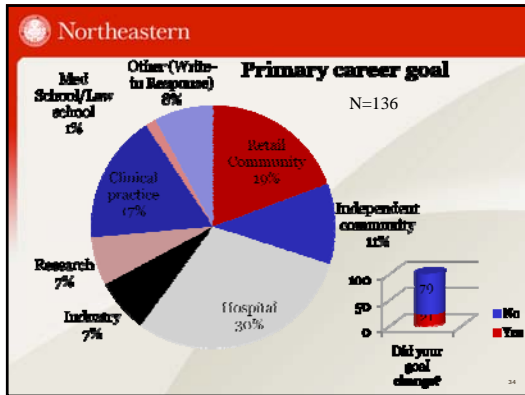
- Pass/Fail
 - Advantages
 - *Simplified*
 - *Students have to meet all requirements to pass*
 - Disadvantages
 - *No ability to assess quality of work*
 - *No incentive for students to submit work on time*

Challenges in implementation

- Resources
 - Costs and administrative
- Learning curve for administrators
- Learning curve for students and faculty
- Training time

Data aggregated

- Primary and Secondary Career Goals
- ABO self-assessment
 - Academic
 - Experiential (IPPE/ Co-op)
 - Professional activities
- Preferences for 2nd and 3rd IPPE
 - Practice type
 - Location



Northeastern Academic ABOs Self-Assessment

Response Legend:
 1 = K: Know/ recall facts 2 = C: Can explain in my own words facts/ implications 3 = A: Apply facts to a new situation/ solve a problem 4 = E: Critically analyze components of a complex problem; compare & contrast solutions to the problem 5 = S: Develop a recommendation/approach to a problem based on the critical analysis of components

Rated Item(s)	Total (n)	N/A (%)	Ave
1. Demonstrate evidence-based knowledge of the scientific foundations of medication therapy management	116	2.6	2.6
2. Apply scientific knowledge and principles of medicinal chemistry, pharmacology, pharmaceutics and pharmacokinetics to the design of rational therapeutic strategies	115	1.7	2.9
3. Design and modify therapeutic strategies based on scientific evidence to optimize medication therapy management	114	9.7	2.6
6. Use communication and information technology effectively and appropriately	113	2.7	3.4
7. Retrieve, analyze, interpret, synthesize, and manage professional, lay, and scientific information and literature	114	3.5	3.3

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Student survey methods

- P1-P4 students were surveyed about portfolio process, perceived value, and attitudes towards e-platform
- IRB approval was obtained
- Surveys were administered during class time or required on-campus meeting for P4 students to increase response rates

Student survey results: career/professional development

Please rank your agreement with the following statements relating to overall portfolio process	P1	P2	P3	P4
	119/130 91.6%	87/101 86%	117/128 91.4%	102/118 86%
Portfolio activities enabled me to further clarify my career goals	2.5	2.1	2.3	2.3
Identifying career goals helps me take advantage of opportunities to prepare for that career at both school on co-op	2.7	2.5	2.6	2.4
I would have participated in fewer professional activities if it was not required by the portfolio process	2.9	2.8	2.9	2.9
The required professional activities participation has enriched my college experience and professional development	2.5	2.4	2.5	2.5

Strongly agree - 4 Agree - 3 Disagree - 2 Strongly disagree - 1

Student survey results: faculty-student interactions

Please rank your agreement with the following statements relating to overall portfolio process	P1	P2	P3	P4
	119/130 91.6%	87/101 86%	117/128 91.4%	102/118 86%
I had face-to-face meetings with my advisor	3.4	3.4	3.6	3.3
The feedback I received from my advisor was constructive and useful	2.8	2.6	2.9	2.8
My portfolio received fair evaluations	3.3	3.3	3.4	3.1

Strongly agree - 4 Agree - 3 Disagree - 2 Strongly disagree - 1

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Student survey results: process

Please rank your agreement with the following statements relating to overall portfolio process

	P1 119/130 91.6%	P2 87/101 86%	P3 117/128 91.4%	P4 102/118 86%
I understand the purposes of the pharmacy portfolio	3	2.8	2.9	2.8
I would prefer that the portfolio was not attached to any courses but was a free standing requirement for progression	3.1	2.9	2.5	2.6
Now that the documentation of my progression toward achieving the program's ABO is required, the e-portfolio is a good method to accomplish that requirement	2.6	2.6	2.7	2.6
My understanding and appreciation for progression portfolio has increased over time (from freshman to senior years)	2.3	1.9	2.2	2.2
I prefer to receive a specific grade (%) for my portfolio as opposed to Pass/Fail	1.4	1.4	1.9	2.1
I prefer that the portfolio grade be included in the grade for the course to which it is attached	2.3	1.8	2.5	2.2

Strongly agree = 4 Agree = 3 Disagree = 2 Strongly disagree = 1

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Student survey results : value

Please indicate your perceived value of the individual components of the pharmacy portfolio

	P1 119/130 91.6%	P2 87/101 86%	P3 117/128 91.4%	P4 102/118 86%
1. Setting career goal	3.3	3.1	3.1	2.7
2. Creating an action plan for years left in school to enable me to further explore my career goals	2.8	2.3	2.3	2.5
3. Identifying my Co-op preferences	3.1	3	3	2.7
4. Reflecting on my Co-op experience(s)	2.9	2.7	2.6	2.5
5. Documenting professional activities	2.5	2	2.2	2.5
6. Meeting and discussing with my advisor my career goals, coop(s), and academics	2.9	2.5	2.9	2.6
7. APPE preferences (during the 5 th year)	N/A	N/A	2.9	2.8
8. Self-assessment of competencies during clinical rotations (portfolio grid)	N/A	N/A	N/A	2.3
9. Self-assessment of ABOS	2.5	N/A	N/A	N/A

Is very valuable to me =4 Has some value to me =3 Has little value to me =2 Has no value to me =1

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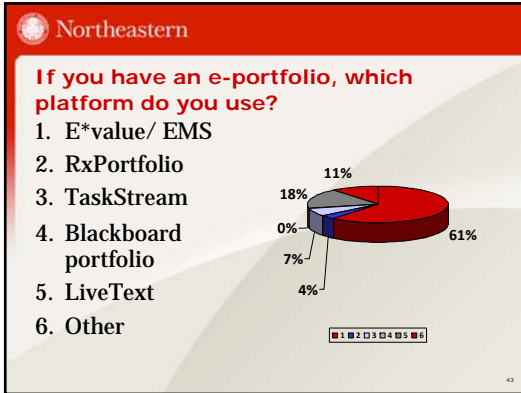
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For those who have a portfolio, have you gone from a paper to an e-portfolio?

1. Yes
2. No

61% 39%

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Student survey results: e-portfolio

Results for P1 students (n=119) (91.6%)

	4 Strongly agree	3 Agree	2 Disagree	1 Strongly disagree	Weighted Ave
I prefer to develop and maintain my pharmacy progression portfolio on an electronic platform	24.3	47	15	9.24	2.9
Given that the ABO self-assessment parts of the portfolio are new, the whole portfolio process would have taken me less time with a paper portfolio than with the e-portfolio version.	11	31	37.8	15.9	2.4
I prefer the electronic format because it will enable me to electronically archive the evidence I included in the portfolio.	21	47.8	18.4	9.2	2.8
I would have preferred additional instructional time on how to use TaskStream to build my e-portfolio	15.9	39.4	36	5	2.7

Time spent on the e-portfolio requirements during the Fall semester

<2h (16%)	2-5h (57.1%)	6-10h (14.2%)	11-15h (5%)	15h (1.7%)
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Student survey results: e-portfolio

Results for P1 students (n=119) (91.6%)

	4 Strongly agree	3 Agree	2 Disagree	1 Strongly disagree	Weighted Ave
I found TaskStream easy to access	14.2	40	27.7	14.2	2.6
I found TaskStream easy to navigate and use when creating my portfolio	11.7	34.4	35	15	2.4
Now that I have used TaskStream, it will take me less time to do a similar assignment next year	14	59.6	17.6	5	2.9
Using TaskStream during my last Co-op was relatively easy after the Fall pilot	8.4	57.9	23.5	6	2.7
Self-assessment of my baseline IPPE (Co-op) competencies gave me a better idea about the skills and knowledge that I need to acquire during the Co-op	5.9	63.8	19.3	6.7	2.7
Self-assessment of my competencies at the end of Co-op required me to reflect on my Co-op experience and realize what I was able to learn during it	10	59.6	20	5.9	2.8

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Student comments

Positives Δ

- Professional involvement
- Advisor interaction
- Career development
 - Resume
 - Goals
 - Linking goals with practice experiences

- Make portfolio electronic
- Advisor
 - Consistency in advisor
 - More time with advisor
- Streamline requirements
- Separate from courses

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Faculty survey results: process

31 responded (75.6%)

Scale: Strongly Agree (4) to Strongly Disagree (1)

	Average
I understand the purposes of the pharmacy portfolio	3.7
Portfolio directions and evaluation instruments are clear and straightforward	3.2
I receive adequate support from school administration and/or office staff to enable me to participate as an advisor for portfolios	3.1
I receive adequate support from portfolio coordinators	3.4
I enjoy interacting with student advisees	3.8
I enjoy observing students progress throughout their years at NU	3.9
I feel confident in advising students about their career options	3.8
I understand the value of students' self-assessment of ABOs	3.3
I found Taskstream easy to navigate	2.3
I understand the advantages of eportfolio platform in terms of data collection and assessment	3.3
I prefer electronic platform to paper/binder portfolios	2.8

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Faculty survey results: process

31 responded (75.6%)

I spent the following amount of time on the during the Fall semester (including online /paper review and evaluation and meetings with students):

Portfolio type	<30 min	30-60 min	1-2 h	2-4 h
E-portfolio 3 rd year	7%	39.3%	21.4%	32%
Paper portfolio 5 th year	16.7%	50%	16.7%	16.7%

8 faculty indicated an increase in time spent on e-portfolio compared to paper; 2 faculty indicated a decrease in time

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Faculty comments

Positives

- Student advisor interaction
- Career advising

Δ

- Streamline requirements
- Keep grading simple, but reward quality and adherence to deadlines
- Need to increase administrative support

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Lessons learned

- Student acceptance is low
- Need to simplify
 - ABO self-assessment in 3 different places
- Need to invest more time with students teaching them how to document achievement of outcomes

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Challenges

- Costs
 - Structured e-portfolios are fee-based
 - University vs. students to pick up the cost
- Need for infrastructure
 - Administrative and technical expertise
 - Training resources
 - Incorporation into progression standards

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Questions for discussion

- Challenges
- Pros and cons of various software
- Student acceptance
- Best ways to incorporate into the curriculum
