Longitudinal Assessment of Learning Outcomes in Experiential Education

• Abby A. Kahaleh, BPharm, MS, PhD, MPH
  Associate Dean for Experiential Education
  Roosevelt University College of Pharmacy

• Chris J. Turner, BPharm., PhD
  Professor and Director of Experiential Programs
  University of Colorado School of Pharmacy
Assessing key educational outcomes

Kari L Franson, PharmD, PhD
University of Colorado
Outline: Assessing key educational outcomes

• Assessing competence (Miller model)
• Review current assessment strategies
• Introduce role of reflection in assessment
Assessing student levels of competence

Typical assessment strategies

Does

Shows how

Knows how

Knows

observation portfolios
logs
peer assessment
practical assessment
OSCE
written assessment
written assessment

Examples of current assessment strategies for therapeutic outcomes

- Portfolios of SOAP notes write-ups
- Paper-based cases
- Extended matching of drug to disease state
- MCQ over pharmacotherapy

Knows

Knows how

Show how

KGF's
Examples of current assessment strategies for professionalism

- 360° evaluations
- Critical incident reports
- Role-playing
- Written clinical vignettes
- MCQ over law and best practices

Knows
Knows how
Shows
Does
How to create professionals ready for life-long learning

Reflection

Does

Shows how

Knows how

Knows

Teaches what is possible

What is already known and can be done

© Copyright 2011. Franson KL & Turner CJ. University of Colorado

Bridges to Our Bright Future ★ 2011 Annual Meeting ★ American Association of Colleges of Pharmacy

Discover - Learn - Care - Improve Health
The reflective process

• Identified goal(s) for oneself
• Adopted strategies to meet the goal(s)
• Monitored and evaluated own performance (e.g. good, poor)
• Identified knowledge deficiencies
• Identified skill deficiencies
• Identified appropriate resources and learning opportunities
• Took action to maximize learning
• Adopted new methods to improve performance
Reflection can be used throughout the learning process.
Reflection Writing

Kristen A. Brown, Pharm.D.
University of Colorado
School of Pharmacy
Why Reflection?

- Not an inherent trait or intuitive process
- Fostering development may create a self-aware practitioner equipped to engage in lifelong, self-directed learning
- Reflection is a more recognized piece of health professions education initiatives
  - ACGME core professional competencies
  - Key to professional development
  - Embodiment of “medical expertise”
What is Reflection?

• Mann, et al. used 3 definitions (Dewey 1933, Moon 1999, Boud, et al. 1985)
  – Emphasize purposeful critical thinking, analysis of knowledge and experience, achievement of a deeper meaning and understanding (transformative)
  – Meaning within professional context: explore understanding of experiential actions and impact on self and others
How and when do we reflect?

• Reflection triggered by the awareness of a disruption in usual practice
• Activated by situations outside the learner’s comfort zone, beyond the typical events to which they are accustomed; stimulated by anticipation of challenging scenarios
• Repeated exposure to authentic experiences creates the construct to frame, reflect and resolve…development with time and practice
• “Aha!” moments for active engagement
Creating models of reflection

• Iterative and vertical
  – Iterative (Boud, Schön, Keogh and Walker)
    • Knowing-in-action, reflecting-in-action, reflecting-on-action
    • Return to an experience to examine it, deliberately learn to create new understanding and intentionally effect future situations
  – Vertical (Dewey, Hatton and Smith, Mezirow, Moon)
    • Focus on depth and quality of reflection
    • Move from surface/content reflection to premise, critical analysis and transformative learning
Providing guided feedback

• Students want feedback!
• Iterative process encourages familiarity with uncertainty; tolerance to going outside their comfort zone
• Mezirow’s rational discourse: Achieve greater flexibility and creativity, develop more accurate perceptions, set aside preconceived notions to create new meaning and methods
• Literature suggests guidance and supervision are factors that learners perceive to be beneficial
Student perceptions

• Ruland, Ahern: RN-BSN students
  – After receiving faculty feedback on reflective experiences, students:
    • Valued past experiences as a gateway to new learning
    • Gained confidence in their own abilities through the balance of challenge and support
    • Felt supported as professionals/colleagues
    • Increased engagement in new material; appreciated it later as they reflected back
Student perceptions

• Freestone, UK, Kingston Dept of Pharmacy: survey of students
• Valued tutorials designed to give direction on how to construct reflective writings
• Students with better understanding of criteria and assessment put forth more effort to create complex writings, construct ideas and incorporate experiences
• Feedback played major role in performance
  – Future effort stems from drafting, revising, and assessing with transparent criteria and iterative communication with faculty reviewer
Student perceptions

• Higgins, et al. Students place great weight on receiving feedback

• Believe that acting upon feedback positively will bring about future success

• Incremental assessment and associated feedback (longitudinal/iterative) can develop deeper awareness to promote lifelong learning skills
Student perceptions

- Pearson and Heywood (2004): surveyed attitudes by post-graduates in the UK towards use of reflection in learning and found the role of the trainer/supervisor to be critical.
- Hallett (1997) conducted nursing interviews: students believed confidence and reflective capacity developed after practice experience with supervisors.
- Teekman (2000); Gustafsson and Fagerberg (2004): nurses reported guidance and supervision as keys to reflection requiring creative approaches.
Brown University: the BEGAN

• Study in Doctoring course using guided feedback in a series of field notes
• Goal to create a comfort zone where more authentic self-reflection could occur through collaboration with mentor
• Structured, interactive process; comments by reviewers played a “devil’s advocate” role
• Reflection-inviting questions asked to offer possibilities and encourage broader thinking
Brown: Use of faculty mentors

- Teachers are “travelers” serving as guides; feedback directed at more than just transmission of content—“active listeners”
- Aids in the development of more sophisticated reflection skills
- Framework created for structured, written feedback and assessment of reflective quality
- Tool devised to include reflection-inviting questions, relevant personal and anecdotal experiences, analysis of the read and moral of the story/lessons learned
Faculty interventions

- Tool encouraged uninhibited first-read, re-reading, creation of succinct educational messages and pausing to critique their own feedback for bias
- Challenging reflection and increasing capacity for transformational learning requires another person to explore and facilitate recognition of barriers, strengths and weaknesses and determine avenues for future learning and adaptation
Faculty and student perceptions

• Busy lifestyles
• Relating to “net generation” and social media
• Mismatch of expectations?
• Faculty better see what is relevant in current practice, question own assumptions about how material is taught and watch dependency of learner change throughout curriculum
• Students mixed reviews:
  – Value of concrete suggestions, addition of experiences to validate “been there, done that” were positive
  – Decreased engagement due to generational learning styles
  – Future addition of more social media tools and collaborative dimensions
Grading

• Controversy over appropriateness of grading reflections, methods and rubrics
• How did the student generate self-awareness as a result of comments made regarding learning and actions? Value placed on depth of reflection?
• Heterogeneity of faculty feedback is anticipated and appreciated
• Brown guide provides a cushion for inherent variability in faculty comprehension towards approach, style and focus
• Structured steps craft feedback, but variability illustrates a “tapestry of educationally-enriching content for the student.”
Desire for Reflective Feedback

• Student: Value added service
  – Ability to reflect appears amenable over time; important fostering factor is the behavior of mentors
  – Structure early on to provide iterative feedback on the process and content of appropriate reflection
  – Failure to thoughtfully evaluate reflective capacity may imply that the activity is without value
  – Goal to develop self-awareness, engage in self-monitoring and direct responsibility for own learning
  – Authentic approach to enhancing professional development capacity and personal role clarification

• Faculty: Window into the student’s world

• Implications for future: IPE and team reflection; workshops and tutorials for mentors/students
Reflection Grading & Feedback

Wes Nuffer, PharmD, CDE
University of Colorado
Feedback & grading of reflection

“Every interaction is an opportunity to teach and to learn…”
-Scott Peck, The Road Less Traveled

- Student’s learning dependent on quality feedback
  - Students “don’t know what they don’t know”
  - Early writing heavily narrative, little reflection
  - Limited ability to critically analyze their performance
- Early feedback provides examples for students
Building the ability to self-reflect

– Purposeful method of analysis of performance
  • What were my strengths/what did I do well?
  • What could I have improved upon?
  • What did I learn?
  • What will I incorporate from this experience?

– Examples based on students’ writing
  • What conditions could have also caused that dry cough?
  • What steps could you have taken to learn how to better get around that language barrier moving forward?
Longitudinal picture of work

• Preceptor-student pairing maintained if possible
  – Identification of unique needs/trouble areas
  – Allows preceptors to see students improve

• Expectations from reflection progresses
  – P3 students held to higher standard of writing
  – Evaluating the incorporation of previous work
Quality over quantity

• Level of effort may decrease with increasing numbers
  – Revisions may require additional time
  – Pairing of 3-5 students per preceptor

• Large numbers of preceptors needed
  – 2011: 40 P2 writing preceptors
  – 2011: 44 P3 writing preceptors
Standardizing expectations in grading

• Preceptors drawn from variety of backgrounds
  – Community practice vs. hospital practice
  – Academia preceptors vs. clinical preceptors

• Students have little background in reflective work
  – Expectations are not clear
  – No “correct answer”
Use of rubrics for grading

• Examples of each definition to facilitate consistent grading

*Meets expectations with limitations.* The student provides convincing evidence, having identified ways to improve, that she/he takes active steps to achieve improvement in most, but not all, competency statements. The student is restricted in her/his improvement strategies. The student provides convincing evidence that she/he has applied and analyzed the results of at least one improvement strategy in most, but not all, competency statements.
Preceptor training

• Scheduled group meetings of preceptors
• Writing examples provided
  – Preceptors assess writing individually
  – Discussion within group of how student was rated
• Clarification of goals of the reflection
  – Writing preceptors have varying experience with reflection as well
  – Recruitment out of the graduating class
Major and minor preceptors

• Two levels of writing feedback
  – Major preceptor receives all work across both years
  – Minor preceptor takes 1 competency across 25% of the class
    • Experiential faculty
    • Provides consistency horizontally across the class
Preceptor determines content for reflection
Flexibility of requirements within reflection

- Continued Professional Development
- Use of didactic knowledge
- Reflection
  - Does
  - Shows how
  - Knows how
  - Knows