Direct Feedback and Coaching in Medical Education

Center for Education and Scholarship
January 18, 2012

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A Feedback Opportunity Gone Awry
Intended Learning Outcomes: After attending this session, you will be able to……

• Summarize the literature demonstrating the importance of feedback in improving learner performance

• Describe the elements of effective feedback
The Power of Feedback
Feedback

“The process by which the teacher (peer) observes a student (peer) performing an activity, analyzes the performance, and then provides information back to the student (peer) that will enable the student (peer) to perform the same activity better in the future.”
Feedback Believers

• Business Community
    • “People need to know where they stand”
    • “Most workplaces have a serious lack of candor”

• Competitive Athletics
  – Phil Jackson – 11 NBA titles
    • Coaching and feedback style credited for teams success.

• Medical Societies / Organizations
  – Liaison Committee on Medical Education (LCME)
  – ACGME
  – Alliance for Clinical Education
  – American Medical Association partnering with Press Ganey
Requirements for a system to give maximum support to performance

1. Identify the expected accomplishments.
2. State the requirements of each accomplishment. If there is any doubt that people understand the reason why an accomplishment and its requirements are important, explain this.
3. Describe how performance will be measured and why.
4. Set exemplary standards, preferably in measurement terms.
5. Identify exemplary performers and any available resources that people can use to become exemplary performers.
6. Provide frequent and unequivocal feedback about how well each person is performing. This confirmation should be expressed as a comparison with an exemplary standard. Consequences of good and poor performance should also be made clear.
7. Supply as much backup information as needed to help people troubleshoot their own performance.
8. Relate various aspects of poor performance to specific remedial actions.
The Role of Deliberate Practice in the Acquisition of Expert Performance

K. Anders Ericsson, Ralf Th. Krampe, and Clemens Tesch-Römer

The theoretical framework presented in this article explains expert performance as the end result of individuals' prolonged efforts to improve performance while negotiating motivational and external constraints. In most domains of expertise, individuals begin in their childhood a regimen of effortful activities (deliberate practice) designed to optimize improvement. Individual differences, even among elite performers, are closely related to assessed amounts of deliberate practice. Many characteristics once believed to reflect innate talent are actually the result of intense practice extended for a minimum of 10 years. Analysis of expert performance provides unique evidence on the potential and limits of extreme environmental adaptation and learning.

“Subjects should receive immediate informative feedback and knowledge of results of their performance”
Feedback Literature

General Education Literature

  – Synthesis of over 500 meta-analysis, 180,000 studies, 20-30 million students.
    • >100 factors influencing educational achievement
    • Average Effect Size 0.40
  – 12 Meta-analyses included information on feedback
    • Effect Size 0.79
    • Feedback was in the top 5-10 highest influences on student achievement.
    • Effect Size for some types of feedback as high as 1.24
Feedback literature

Medical Education literature

Improved Performance on History and Physical Examination
When encounters videotaped and feedback provided.
Scheidt PC. J Med Educ. 1986

Improvement in physician judgment

Critical component of high-fidelity simulation training
Simulation been shown to improve patient outcomes
Issenber SB, McGaghie WC. Med Teach. 2005
Quite a few studies/reviews that have reported either no effect or debilitating effects on learning

- Kluger & DeNisi, Psychological Bulletin 1996
  - 1/3 of of total studies reviewed in the above two meta-analyses demonstrated negative effects of feedback on learning
- Mory, Handbook of research on educational communications and technology, 2004
- Fedor DB. Journal of Management. 2001
Good Feedback Can Significantly Improve Learning Processes and Outcomes, if delivered correctly
General Principles of Effective Feedback Informed by the Literature
A Model of Feedback to Enhance Learning


Highest impact feedback:

• Contained information about a task and how to do it more effectively

• Relates to specific goals
A Model of Feedback to Enhance Learning


Feedback can be harmful if:

- Includes praise for task performance
- Is vague
- Is norm-referenced
A Model of Feedback to Enhance Learning:


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**Purpose**
To reduce discrepancies between current understandings/performance and a desired goal

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**The discrepancy can be reduced by:**

**Students**
- Increased effort and employment of more effective strategies OR
- Abandoning, blurring, or lowering the goals

**Teachers**
- Providing appropriate challenging and specific goals
- Assisting students to reach them through effective learning strategies and feedback

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**Effective feedback answers three questions**
- *Where am I going?* (the goals) Feed Up
- *How am I going?* Feed Back
- *Where to next?* Feed Forward

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**Each feedback question works at four levels:**

- **Task level**
  - How well tasks are understood/performed

- **Process level**
  - The main process needed to understand/perform tasks

- **Self-regulation level**
  - Self-monitoring, directing, and regulating of actions

- **Self level**
  - Personal evaluations and affect (usually positive) about the learner
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- **Self level**: Personal evaluations and affect (usually positive) about the learner

- Of these, the most powerful feedback addresses:
  - Processing of tasks
  - Self-regulation

- How we do this *effectively* is the evidence-informed art of providing feedback.
Elements of Effective Feedback


- Comprehensive literature search
- More than 100 documents, including articles, dissertations, abstracts, books and conference proceedings used
- Goal of applying findings from these documents to creating a set of guidelines related to formative feedback
Formative Feedback Guidelines to Enhance Learning (things to do)

Focus feedback on the task, not the learner

Feedback to the learner should address specific features of his or her work in relation to the task, with suggestions on how to improve
Formative Feedback Guidelines to Enhance Learning (things to do)

Provide elaborated feedback to enhance learning

Feedback should describe the what, how, and why of a given problem.
Formative Feedback Guidelines to Enhance Learning (things to do)

Present elaborated feedback in manageable units

Present in small enough pieces so that it is not overwhelming and discarded
Formative Feedback Guidelines to Enhance Learning (things to do)

Be specific and clear with feedback message

If not, may impede learning and can frustrate learners. Try to link feedback clearly and specifically to goals and performance.
Formative Feedback Guidelines to Enhance Learning (things to do)

Keep feedback as simple as possible but no simpler (based on learner needs and instructional complaints)

Simple feedback is generally based on one cue (e.g., verification or hint), and complex feedback on multiple cues (e.g., verification, correct response, error analysis). Keep feedback as simple and focused as possible. Generate only enough information to help learners and not more.
Formative Feedback Guidelines to Enhance Learning (things to do)

Reduce uncertainty between performance and goals

Clarify goals and seek to reduce or remove uncertainty in relation to how well learners are performing on task, and what needs to be accomplished to attain the goal (Action Plan)
Creation of an action plan
Feedback: Action Plan

• Creation of an action plan leads to change
  – Feedback alone does not cause change, it is the goals that people set in response to feedback (Locke et al, 1990)
  – 5 Principles of goal setting
    • Clarity
    • Challenge
    • Commitment
    • Feedback
    • Task complexity
Feedback: Action Plan

SMART

- Specific
- Measurable
- Attainable (Agreed)
- Relevant (Realistic)
- Time-bound
Back to Guidelines
Formative Feedback Guidelines to Enhance Learning (things to do)

Give unbiased, objective feedback

Feedback from a trustworthy source will be considered more seriously than other feedback, which may be disregarded.
Formative Feedback Guidelines to Enhance Learning (things to do)

Promote a “learning” goal orientation via feedback

Formative feedback can be used to alter goal orientation – from a focus on performance to a focus on learning. Craft feedback emphasizing that effort yields increased learning and performance, and mistakes are important part of the learning process.
Formative Feedback Guidelines to Enhance Learning (things to do)

Provide feedback after learner’s have attempted a solution

Do not let learners see answers before trying to solve a problem on their own
Formative Feedback Guidelines to Enhance Learning (things to do)

Check for understanding

Important to assess the learner’s understanding of what was said
Formative Feedback Guidelines to Enhance Learning (things to do)

Ask for self assessment

Encourages self reflection and provides an opportunity to assess insight
Feedback from the Learner’s Perspective: A Discussion of Self-Assessment
Definition: self-assessment

Judgment (unguided) on one’s own performance, level of knowledge, skill or understanding
Self Assessment

Self-assessment is often poor

Shaped by

• Culture
• Gender
• Cognitive reasons
  – Information neglect
  – Memory biases

• Psychological factors
  – Optimistic outlook
  – Preservation of ego

• Social factors
• Relationships

Eva & Regehr, Jcont Ed in Health Prof, 2008
Informed Self Assessment

Internal and external conditions
- Climate
- Relationships
- Personal attributes
- Credibility of information

Sources of Information
- Internal
- External

Internal Influences
- Emotions
- Experience
- Confidence

Interpretation
- Reflect
- Calibrate
- Filter
- Assimilate

Response
- Ignore
- Reject
- Seek
- Accept

Tensions
Within and between people in learning environment

Sargeant et al. 2010
Factors Effecting Interpretation & Response

Feedback Content

Confirming agrees with learner view of self
- Learner ++
  - Feedback ++
- Learner --
  - Feedback --

Disconfirming does not agree with learners view of self
- Learner ++
  - Feedback --
- Learner --
  - Feedback ++

Sargeant, 2010, Eva, 2010
Benefits of self-assessment:

• Provides opportunity to assess insight of learner

• More likely to generate learning goals from self-perception

Strategies for informed self-assessment

• Focus on specific task/skill
  – Avoid assessment of global performance or knowledge-base

• Consider set-up for self-assessment:
  – Establish shared, clear goals for educational activity
  – Make specific time for self-assessment

• Acknowledge effect of multiple factors on self-assessment including:
  – internal factors e.g. emotional response to feedback
  – external factors e.g. feedback culture of institution

• Link to personal goals/action plan
Back to Guidelines
Formative Feedback Guidelines to Enhance Learning (things to avoid)

Do not give a normative comparisons

Avoid comparisons with other students – directly or indirectly. Do not draw attention to “self” during learning
Be cautious about providing overall grades

Feedback should note areas of strength and provide information on how to improve, as warranted with and without overall grading. Effective feedback is related to the content of the comments.
Formative Feedback Guidelines to Enhance Learning (things to avoid)

Do not present feedback that discourages the learner or threatens the learner’s self-esteem (avoid being too critical or too controlling)

Draws focus to self and away from the task at hand
Formative Feedback Guidelines to Enhance Learning (things to avoid)

Use “praise” sparingly, if at all

Direct learner’s attention to self which distracts from the task and consequently from learning
Formative Feedback Guidelines to Enhance Learning (things to avoid)

Try to avoid delivering “biased” feedback

Consider the mode of delivery (neutral “manner” good).
Do not interrupt learner with feedback if the learner is actively engaged.

Interrupting a student who is immersed in a task can be disruptive and impede learning.
Formative Feedback Guidelines to Enhance Learning (things to avoid)

Avoid using progressive hints that always terminate with the correct answer

Although hints can be facilitative, they can also be abused, so if they are employed to scaffold learners, provisions to prevent their abuse should be made. Consider using prompts and cues (i.e., more specific kinds of hints)
Formative Feedback Guidelines to Enhance Learning (things to avoid)

Minimize use of extensive error analysis and diagnosis

May not provide sufficient benefit to learning
Putting it all together

Remember – there is no golden script
• Establish clear, shared goals for educational or clinical activity
  – Let the learner know where the target is
• Establish rapport
• Demonstrate learner readiness for feedback
  – Is this the best time?
• Let them know feedback is coming
• How would I feel if I received this feedback?
Approach to Feedback Session

• Ask for self-assessment

• Respond to self-assessment
  – Give feedback on self-assessment if insightful, mature, etc.; encourages reflective practice
Approach to Feedback Session

- Describe notable aspect of performance
  - Based on observation (event/behavior)
    - “I observed”…. Or “I noticed”……
    - Checklists or other tools may be beneficial
- Wait for response……..wait some more
- Assess impact
  - A description of the effects of the facts/observations (results and/or reactions)
- Commentary
  - The facts and impacts explained in the context of the goal
Approach to Feedback Session

• Recommend next step to enhance performance
  – Encouragement
• Check for understanding (ask them to summarize)
• Closure
  – Retry
• Ongoing reinforcement
Feedback in Your Institution – Promoting Mindfulness and Instituting a Cultural Change
FIVE STAGE MODEL OF A LEARNER DURING A FEEDBACK CYCLE

Current State

Adjustment

Search / Retrieval

Evaluation

Response

Culture of Feedback

- Supported sequential process rather than a series of unrelated events
- Need to build established, longer-term professional relationships
- While the apprenticeship model may not work in current day medicine.....
  - Still need to develop forms of supervision to help collate sources of feedback

Summary

• Feedback, if done correctly, can significantly improve learning and performance

• Rely on evidence-informed guidelines for delivery of effective feedback

• Must find a way to promote mindfulness in our learners

• To collectively raise learners from good to great, institutions (not just individuals) need to start looking at their feedback culture

• An evidenced-based cultural shift is required