Medical Education Grand Rounds
University of Pittsburgh School of Medicine

“Feedback in Clinical Medical Education”
- 25 Years Later -

Jack Ende, MD
October 10, 2008
What Else Happened in 1983?

- Dr. Barney Clark receives first artificial heart pump, survives for 100 days
- French scientist, Dr. Luc Montagnier discovers HIV
- the musical *Annie* closes on Broadway, raising concern about whether the sun will come out, tomorrow
- Bjorn Borg retires after winning 5 consecutive Wimbledon championships
- Microsoft *Word* is released
- Michael Jackson’s “*Thriller*” broadcast for first time
- the Denver Nuggets and Detroit Pistons combine for an NBA record 370 points, with Detroit winning in triple overtime 186-184
- McDonald’s introduces the McNugget
- and...
Feedback in Clinical Medical Education

Jack Ende, MD

The Nature of Feedback

The concept of feedback—information that a system uses to make adjustments in reaching a goal—was first appreciated by control engineers in the 1930s and has since been applied in many fields. The father of cybernetics, Norbert Wiener, was one of the first to extend the concept to the humanities:

"Feedback is the control of a system by reintroducing into the system the results of its performance. If these results are merely used as numerical data for criticism of the system and its operation, we have the simple feedback of the control engineer. If, however, the information which precedes feedback from the performance is able to change the general method and pattern of the performance, we have a process which may very well be called learning.

This importance of feedback in the acquisition of clinical skill follows from the nature of the clinical method. As a compendium of cognitive, psychomotor, and affectual behavior, clinical skill is easier demonstrated than explained. And, like ballet, it is best learned in front of a mirror. Feedback occurs when a student or house officer is offered insight into what he or she actually did as well as the consequences of his or her actions. This insight is valuable insofar as it highlights the discrepancy between the intended result and the actual result, thereby providing impetus for change. It is what happens when an attending physician observes a student or house officer performing a history and physical examination, presenting a patient or rounds, mak-

"Will AID training a group of physicians who have never been observed," Ludwig Elchon, MD, wrote after he courageously took a second term at being a medical student before stepping down as a department of medicine chairman. Dr. Elchon's observation is accurate but his statement identifies only part of the problem. Not only are clinical skills infrequently observed, but when they are, the information so obtained does not go to where it can be most helpful—back to the trainees themselves. How widespread a concern is this? One needs only to poll a few medical students or house officers, or think back to one's own training, to appreciate how little attention is given to feedback during clinical training. The problem of how best to inform trainees about their performance is not unique to medicine; in fact, guidelines already exist in the business administration, organizational psychology, and education literature. This article draws on these sources, along with published research and opinions on medical education plus some personal observations and considers the special role of feedback in clinical medical education. The purpose here is threefold: first, to provide teachers of clinical medicine and their students with an understanding of the feedback process; next, to analyze both the barriers that interfere with feedback as well as the consequences for clinical training if feedback is ignored or handled poorly; and, finally, to provide practical guidelines for offering feedback as a part of clinical medical education.

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JAMA Aug 12, 1983—Vol 250, No 6

Reprinted from the Journal of the American Medical Association

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How This Paper Came About

- motivation: clueless in Boston
- method: “try aisle 5”
- mining other fields: “face” validity
- manuscript: a stacked deck
Our Agenda

- components of this now 25 year-old paper
  - definition of feedback
  - utility in clinical teaching
  - barriers
  - guidelines
- critique
- ideas for Feedback 1.1
“If they wanted to name a clinical sign after me, why couldn’t they have picked a good one?”

John Homans, MD
1954
information highlighting the discrepancy between the intended (ideal) and actual performance; designed to influence future performance
Towards a More Nuanced Definition of Feedback

- observations in “the clinic” (1995)
  - opportunity spaces
  - hinting with questions
  - ratify and re-ask
- not just a mirror, but a map
  - displaying the big picture
  - “you are here”
Rationale for Feedback - 1983

Integral to learning a clinical skill, especially when the learner "goes first"
Towards a More Instrumental Form of Feedback

- learning a culture
  - Situated Learning – J. Lave et al., 1992

- understanding principles
  - Double-loop Learning – C. Argyris et al., 1994
Learning from Experience, Alone

- Action strategy
- Consequences
- Single-loop learning
Learning from Experience, with a Mentor

- governing principles
- action strategy
- consequences

single-loop learning

double-loop learning

feedback from faculty/mentor

Adapted from Argyris, et al, 1994
Barriers to Feedback - 1983

- requires direct observation
- goals not shared
- nature of clinical performance
- egos, theirs and yours
...And, It May Be Even More Difficult Now

- contemporary systems of care
- culture of support
Well, you've been a pretty good hoss, I guess. Hardworkin'. Not the fastest critter I ever come across, but...

No, stupid, not feedback. I said I wanted a feedbag.
Guidelines for Feedback - 1983

- develop from shared goals
- utilize first hand observations
- be specific
- focus on performance, not performer
- identify subjective information
- focus on actions, not intentions
- separate feedback from evaluation
Towards a More Contextual Model for Feedback

- based on sophisticated model of clinical expertise, i.e. connoisseurship
- used to explore assumptions, intentions
- improvement oriented (\textit{and, not but})
- seek situations for real and collaborative problem solving
“The conversations between coach and trainee flow gracefully, almost effortlessly, their attention focused on the problem at hand. They seem absorbed. They speak in half sentences, often completing each other’s thoughts. Time passes quickly; the energy level is high.”

Schon, D.. 1988
“Well young Nigel, you’re looking quite sharp there; and it’s very nice to have you with us. Now, get yourself a proper coat and tie and you’ll no longer have to walk behind us.”