



2006-2007 Effective Teacher Series

Making a Course Student Friendly and Relevant

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January, 2007



Starting Points

Education is not the filling of a pail, but the lighting of a fire.
-W. B. Yeats

Medicine can be thought of as glorified auto mechanics, how good you are depends on how many times you've been under the hood and how many times you've checked the manual. That said, medicine ought to strive to be thought of as automotive engineering, designing better processes for the future rather than just repairing things as in the past.
-K. Tansey



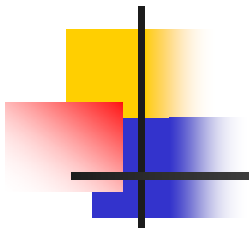
Medical Education

What it shouldn't be –

Jumping through hoops, getting spoon-fed volumes of facts, rote memorization, getting good test scores, test and purge

What it should be –

Learning the what, how and why of being a physician, mastery of enough facts and understanding enough processes to avoid causing harm, learning how to learn and to continue learning, loving learning, excitement and motivation for a “calling”, fun



Course Practicalities



Relevance - What is being taught?

Medical Neuroscience – neuroanatomy and neurophysiology for future physicians; the nervous system, its parts, and what we know about how it works

not Neurology 101 – surveys of neuropathology

not Graduate Neuroscience – basic science in fruit flies and squid

not Clinical Neuroscience – examining patients with neurological ills

Still, use of clinical correlations or basic science discoveries to illuminate normal anatomy and physiology are useful and interesting to students

Difficulties for lecturers – PhDs don't often know the clinical relevance, MDs don't often remember back to an "advanced undergraduate" knowledge base



Focus/Emphasis – Why is it being taught?

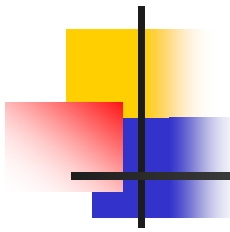
To give all future physicians a fundamental understanding of the nervous system, its parts, and what we know about how it works

To prepare a base on which to build an understanding of clinical neuroscience

To inspire interest in clinical neuroscience specialties

To teach how to marry form and function; To know not only the name of a neural pathway, but where it starts and where it ends, what information it carries and how its functions interact with other structures and functions of the brain

To address one of the areas where medicine will have new and exciting developments in the future



Volume/Level of detail – How much is enough?

Has to be “learnable” in the number of lecture hours provided

Has to be linked to understanding of a clinical scenario

For every structure a function, for every function a structure

Has to emphasize the forest and the important trees

Ought to be such that the main features can be retained after the test because they are understood not just remembered

Should not be used as a discriminator between students



Integration – How is it being taught?

“The syllabus (CD and printed) and the textbook *Neuroscience, 3rd edition*, eds. Purves et al., Sinauer Associates (CD and text) will be utilized for this course. All lectures have any appropriate reading material from the text listed as an assignment at the beginning of the lecture outline in the syllabus. To perform adequately in this course, students will need to master the material presented in the lectures, the labs/reviews, the reading assignments and the syllabus. It is highly recommended that students attend the lectures and labs/reviews and read the syllabus and the assigned text. Besides, if you miss the lectures or labs/reviews, you’ll never get to hear any lecturers’ jokes first hand.”



Integration – How is it being taught?

Nature of the syllabus – “textbook” vs. outline vs. an “in between”

Textbooks – “recommended” reading, advantage of having textbook figures to use in syllabus and lectures, focused reading assignments

Lectures – follow the syllabus, emphasize the learning objectives at the beginning and end of each lecture, be consistent with syllabus and textbook

Lecturers – fewer high quality lecturers giving more lectures reduces inconsistency, redundancy, gaps, and contradictions and improves course integration and “personality”



Integration – How is it being taught?

“Course Disclaimers:

Truth in medical education is relative. Generalization or simplification sometimes results in apparent contradiction. This is not an attempt to confuse medical students and can usually be explained by faculty eager to have you understand what you need to know.

Editing of the syllabus has been done but some material is new this year and invariably mistakes get through. Please bring errors to our attention. Identification of minor errors will get you our thanks, identification of major errors will get you a free lunch at Anderson's”



Maintenance of internal consistency

Course Directors attend all lectures to monitor lecture content

Course utilizes a common set of illustrations, either from the text or as drawn by the Web Curriculum illustrators

Course directors review syllabus for contradictions or other inconsistencies (we've evidently not found them all yet)

Test questions are written to avoid inconsistencies and strive to remain focused on testing the learning objectives

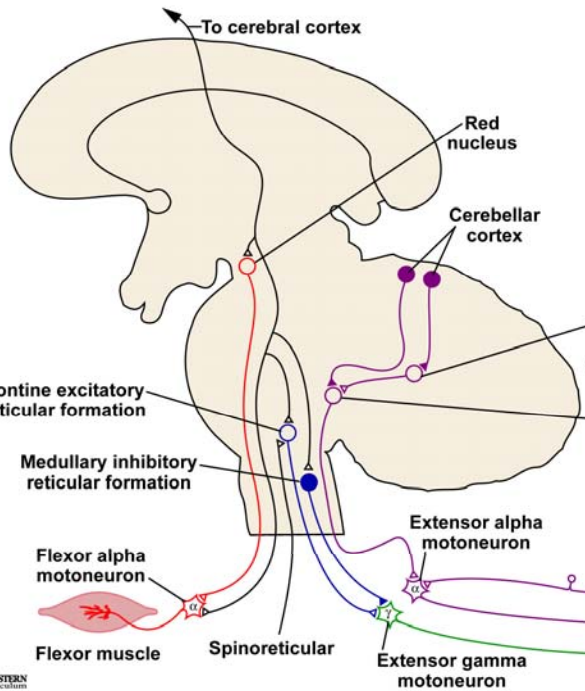
Despite the need for multiple teaching approaches on the same subject, maintenance of the common "truth"

Variety of learning types/approaches – How is it being learned?

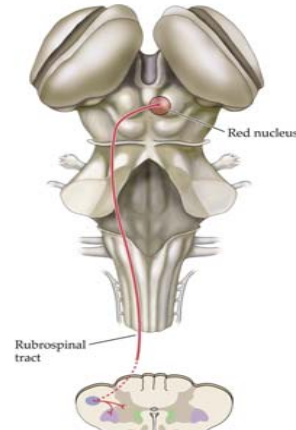
How do you learn
to read a map?



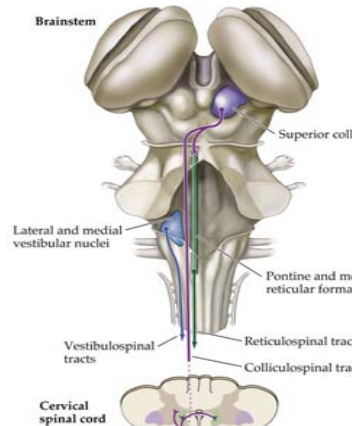
Variety of learning types/approaches – How is it being learned?



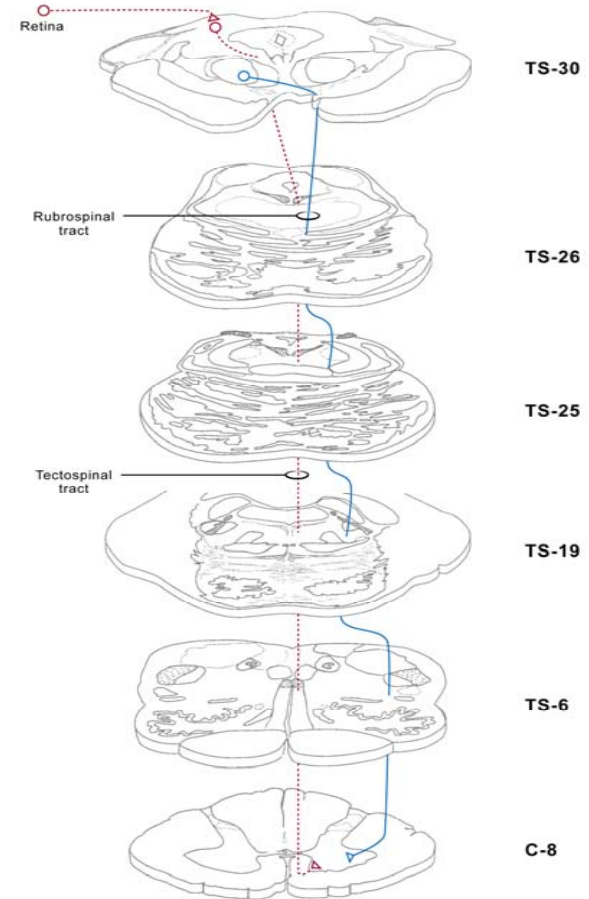
(B) LATERAL BRAINSTEM PATHWAYS



(A) MEDIAL BRAINSTEM PATHWAYS



RUBROSPINAL & TECTOSPINAL TRACTS





Variety of learning types/approaches – How is it being learned?

the forest and the trees – lumpers vs. splitters

getting to the test – mnemonics, memory cues, “reasoning”,
“understanding”

retention past the test – applicability in future settings,
“understanding”

formats – lecture (including style – lectern vs. Socratic),
review sessions, syllabus, textbook, Power Points, MP3, study
groups, prayers for divine intervention just before the test



Testing

Why are we testing? Competence, motivation, discrimination?

How are we testing? New formalities

Testing facts vs. concepts, minutia, trickery

Post-test considerations

Fairness with backbone



Testing

“The relationship between your medical school test scores and your expertise as a physician is loose at best. No patient of mine ever asked what grade I got in Medical Neuroscience. They all seem to be able to tell, however, if I am doing a good job taking care of them.

The sick patient does not come with a syllabus and everything is on the test. Learn, remember, and use as much medicine as you can every day; life and death, suffering and relief hang in the balance.”

K. Tansey



Grading

Why are we grading? Competence, motivation, discrimination?

What is the distribution of performances in the medical school class?

What does a B+ in medical school mean? Why is there a B+?

A/fail not an option despite student psychological preference

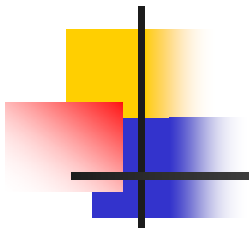
My proposal:

Set the pass/fail objectively, reward the top 15% of performers with honors. Keep score of all the points from tests in the registrar's office to determine class rank but don't tell the students until the class quartiles are determined for residency application



Grading

“Philosophically, we, the course directors, are concerned with making sure students learn an appropriate amount of material to become competent physicians and set the Pass/Fail level accordingly. You, the students, need to concern yourselves with learning, integrating and retaining as much as you can to become competent physicians and to perform well relative to your peers to earn a spot in the residency training program of your choice. Residency programs are not interested in a GPA, rather a class rank and then only which quartile of the class an applicant comes from. (For the record, they consider several things besides class rank when choosing among residency applicants, some of which are weighed more heavily.) Therefore, we will report your numeric grade on a test and the class quartile where that grade falls.”



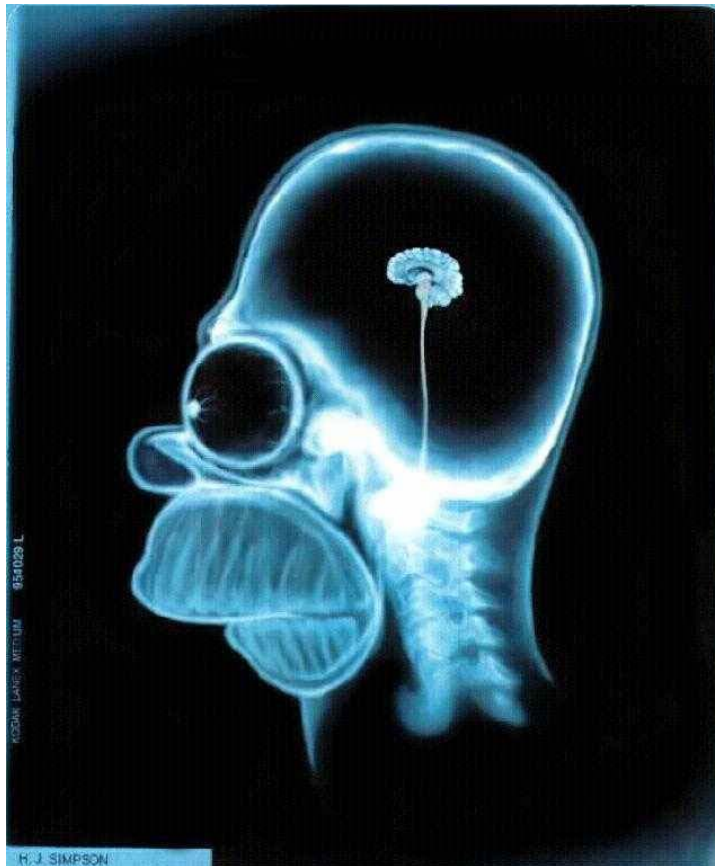
Course Philosophies



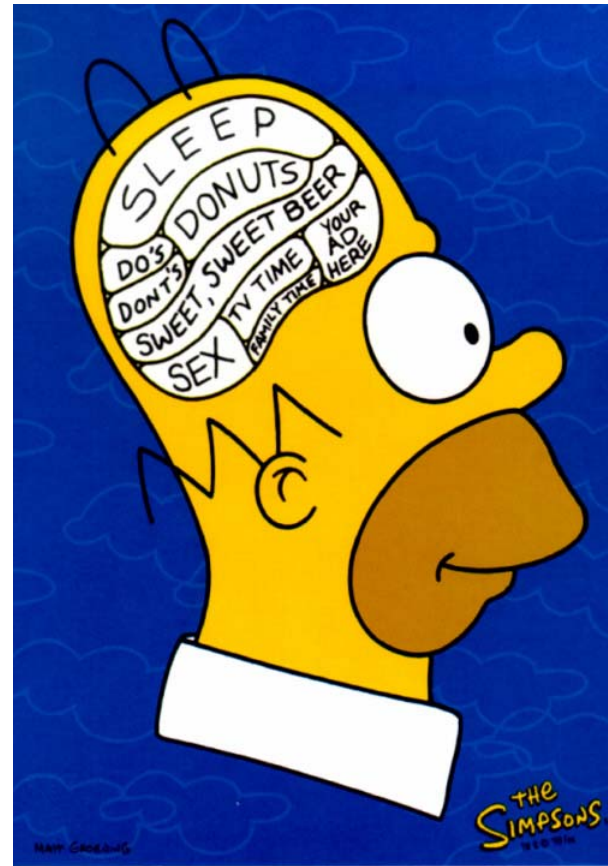
Enthusiasm

“Welcome to Medical Neuroscience. It’s time to move beyond the pumps and filters, the lower evolutionary structures, we’re here to talk about the computer, the master organ, the brain! Not everyone taking this course will enter a medical specialty focused on the nervous system but mastery of this course’s material would permit anyone to do so well. The faculty in this course are enthusiastic about teaching neuroscience and are interested in helping students master this material. Lecturers are available in class, by phone or by email via the Web Curriculum’s Q&A service to deal with questions about their lectures. The course administrator, Charlotte Bentley, is also available to handle your questions. Questions regarding the course in general or questions requiring course director responses can be emailed to MedicalNeuroscienceCourse@utsouthwestern.edu and will be forwarded to Drs. Tansey or Burns as needed. We hope this will be an exciting and rewarding learning experience.”

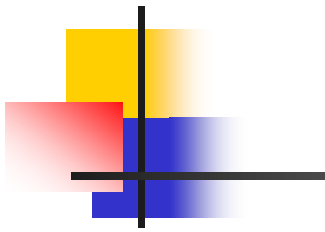
Humor



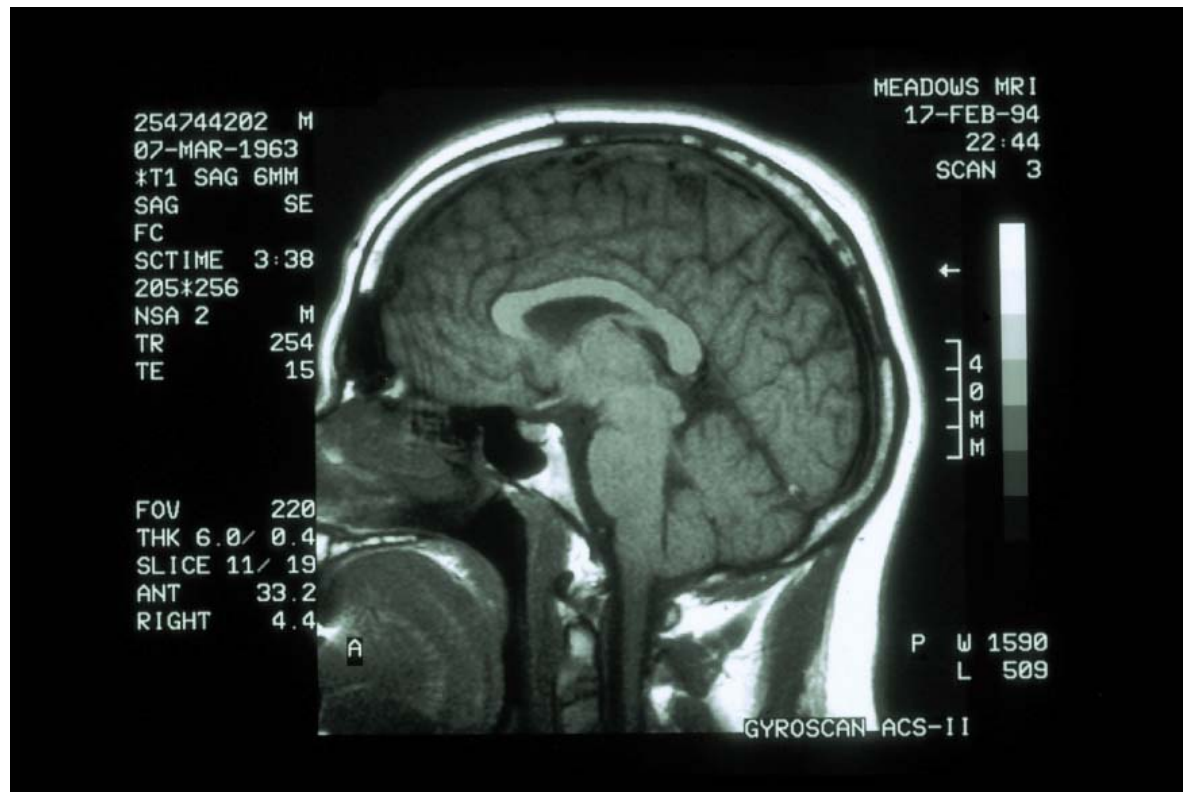
Anatomy



Physiology



When weighing a career in Neurology vs. one in Nephrology remember, an organ that can conceive the theory of relativity, create the ceiling of the Sistine Chapel or execute juggling while riding a unicycle beats the hell out of an organ whose main purpose is to transform beer into urine.





Empathy



DESPAIR

IT'S ALWAYS DARKEST JUST BEFORE IT GOES PITCH BLACK.

www.despair.com



The importance of getting feedback

Student test committee

Pizza lunches

Lecturer/syllabus ratings

Course ratings

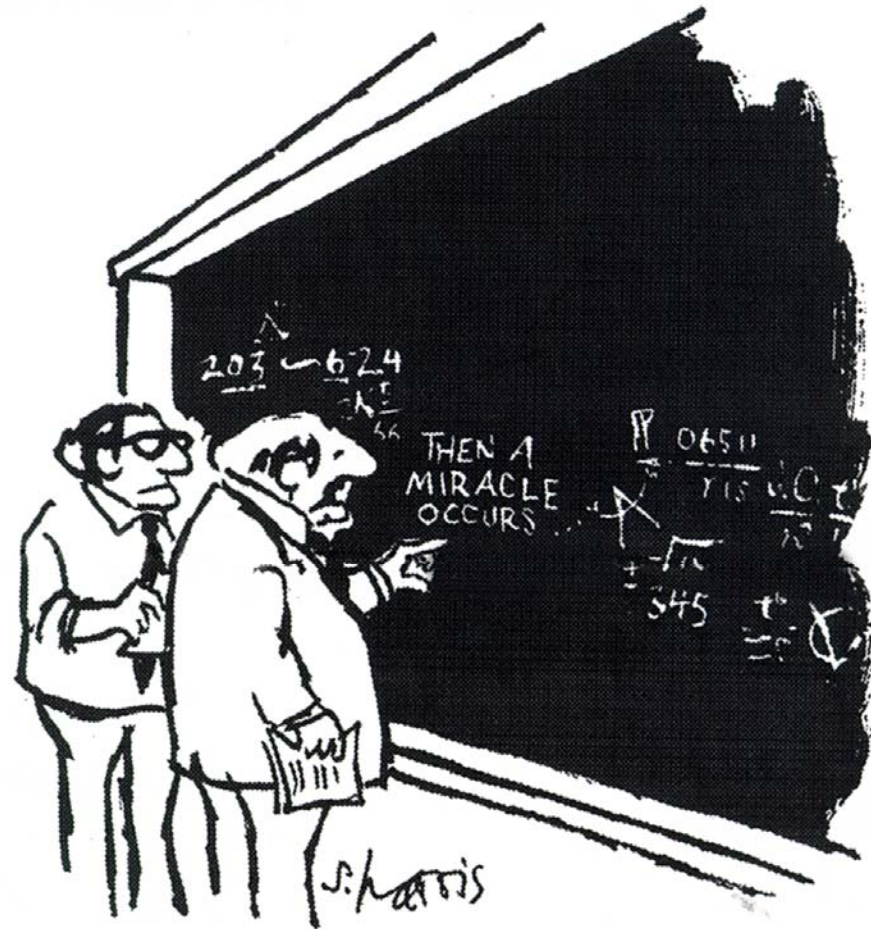
Acknowledgement of course shortcomings

Expressed commitment to course improvements

Involvement of students in those improvements

"I'd rather be lucky than good"

B. Botterman



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."