

ARTICLE

New(er) Kids on the Block – Voices of Junior FUN Faculty

Shelly D. Dickinson

Psychology Department, Neuroscience Program, St. Olaf College, Northfield, MN 55057

How do good teachers get that way? While practice is certainly important, good ideas are essential. The first goal of the “New(er) Kids on the Block” plenary session at the 2008 PKAL/FUN Workshop was to highlight the notable things junior FUN faculty are doing in the classroom and the lab. Happily, both younger and more seasoned faculty colleagues shared a multitude of pedagogical ideas, many of which are briefly described here. The second goal of the session was to provide a place for junior faculty to ask

questions of senior faculty. This broader goal was less directly met, possibly because of time constraints, possibly because of the nature of the group setting. In future workshops, arranging a large session for the exchange of ideas and a smaller session for mentoring type activities might be advisable.

Key words: improving writing skills; course planning; increasing student learning; mentoring; shared wisdom

The goal of the “New(er) Kids on the Block” plenary session at the 2008 PKAL/FUN Workshop was initially to highlight the notable things junior FUN faculty are doing in the classroom and the lab. The idea was to share items that have worked, and to share the flops, with the hope of brainstorming about ways to improve those items that didn’t work as anticipated. Faculty were asked to share ideas about new courses or course modules, exciting assignments, innovative lab exercises and interesting, creative pedagogical and assessment methods.

A secondary, but also very important, goal of the session was to provide a forum for junior faculty to pose questions to our more senior colleagues. Especially for junior colleagues at institutions where more senior neuroscience-oriented colleagues may not be close at hand, having a chance to ask questions and get advice can be essential. Establishing relationships with other faculty, both junior and senior, is crucial for the growth of FUN.

A plethora of great ideas on topics from improving student writing, to lab experiences, to deciding which topics to include on syllabi were described during the session by a large number of participating faculty.

IMPROVING WRITING SKILLS

Many suggestions centered on activities and exercises to help teach scientific writing to students. Some of these will be described with some detail, others will be listed.

Writing abstracts for already published articles can give students practice in concise writing. In this assignment, the abstract is removed from a primary source article and students are required to write one suitable for publication. Abstract length can vary, depending on the instructor’s goal. For example, the Journal of Neuroscience and JUNE both require abstracts of no more than 250 words while Pharmacology, Biochemistry and Behavior abstracts are limited to 200 words. Abstracts submitted to the Society for Neuroscience must be no more than 2300 characters. It can be enlightening for students to write an abstract for multiple venues, and asking them to look at the instructions for authors for a variety of journals helps remind them that there is no one single “correct” format; flexibility is key.

The concept of peer review was incorporated into the suggestions of several people. At least one person mentioned using calibrated peer review, and see Prichard (2005) for a neuroscience-oriented evaluation of the Calibrated Peer Review™ program. Others suggested incorporating concepts of editorial boards and study sections. For example, students serve on “editorial boards” and give feedback to submitting students as to whether a paper would be accepted and why or why not. Students can then resubmit revised papers along with letters to the editor explaining the revisions undertaken. A similar idea was suggested with the use of “study sections” to vet experimental proposals.

The possibility of using publication in IMPULSE (www.impulse.appstate.edu), the Psi Chi Journal of Undergraduate Research, or other undergraduate research journal as a final endpoint for writing assignments was also described. A partial list of undergraduate journals is available at www.cur.org/ugjournal. Students can also serve as peer reviewers for IMPULSE, which can improve critical thinking skills in addition to writing skills.

Other suggestions included using teaching assistants where possible for grading papers and as tutors. Several people commented on the helpfulness of rubrics in assessing writing assignments, once the work of creating the rubric has been done. Having students write and then get feedback on papers in sections, such as Introduction, Methods/Results and Discussion, was also suggested to make assessment more manageable.

COURSE PLANNING

A problem frequently encountered by those who teach survey-type courses is the near impossibility of covering all the desired material from the chosen textbook in a given block of time. For some of us, this leads to continually being behind where we wish to be and eventually leads to cutting topics originally included in the syllabus. One reason for this dilemma can potentially be traced to the difficulty in actively choosing to eliminate material when we believe students really should “learn it all” in order to be truly educated.

Several potential solutions to the cover-it-all problem were suggested by attending faculty. In one case, students are given three Likert scales regarding each chapter at the beginning of the term. One scale measures the perceived importance of the topic, one the perceived difficulty of the topic and one the level of the student's interest in the topic. These ratings are then used to choose the topics to be covered. In a similar vein, questions on the range of topics can either be generated by students or given to them and students then vote on those questions they would like to answer during the term.

Choosing topics from *Scientific American Mind* was also put forth as a means of course planning. An advantage of this technique is that it can lead directly to the availability of good material to supplement textbook readings.

INCREASING STUDENT LEARNING

Not surprisingly, FUN faculty in attendance offered several active, creative pedagogical ideas for increasing student learning of course content.

Various forms of competition have been successfully used in the context of improving student learning. In one case, students learned about various hormones by participating in the "great hormone debate." Teams of students were randomly assigned a hormone to champion. After 15-20 minutes to gather evidence using the textbook and/or other sources, each team had 3-5 minutes to convince the class that their hormone is the most important. This technique could be applied to a multitude of topics (e.g., most important neurotransmitter, sensory system, intracellular signaling pathway, etc.) and the timing could be adjusted from one course period to a week or more. Using a similar strategy, one colleague assigns each student or group of students to become an expert on a particular neuroanatomical region, with an emphasis on both the function and the evolutionary aspect of that region.

Game show strategies have also been employed as pedagogical tools. Neurojeopardy and Quiz Bowl (Brain Bowl) approaches have been used by several faculty. Both writing questions and playing the game can serve as review tools in preparation for exams. Having students serve on question-writing committees for local brain bee activities is another active learning tactic employed by FUN faculty.

Brain Awareness Week activities provide another forum for enhancing learning, and many faculty are actively involved in this effort (<http://www.dana.org/brainweek/>). As one example, students create children's books based on a topic from their physiological psychology class. The books earn them extra credit and are read to local elementary school children during Brain Awareness Week.

Several faculty outlined pedagogical strategies utilizing technologies such as video conferencing and Skype. Yates, Curtis, and Ramus (2006) describe using threaded online discussion groups and videoconferencing to run a collaborative research project between two classes at their respective institutions.

Interviewing experts in the field using Skype or other forms of videoconferencing was also suggested as a

means of engaging students in collaborative inquiry. Students pose questions to leading scientists to compare methodologies and the ways different people form and test hypotheses.

With the lab notebook defense, advanced students can get a taste of graduate school. In the example provided, the lab portion of an upper-level neuroscience course culminated in a student-designed project in the instructor's research area. The students were expected to keep lab notebooks throughout the semester, and be especially diligent with their notes for the final project. Each student then met individually with the instructor to answer questions, i.e., defend their projects, using only their lab notebooks as a resource.

SHARED WISDOM

Initially conceived as a forum to highlight junior faculty and to provide a sort of group mentoring situation, the session turned into a marvelous idea-exchange. Faculty of all levels of experience shared teaching strategies, as well as stories from the trenches. One senior colleague described how he has turned a problem in lab into a teachable moment using the idea of "unexpected feedback," a phrase that many found appealing and apropos of life in the lab and classroom.

In addition to taking some small comfort from the fact that unexpected feedback can happen to even seasoned faculty, junior faculty in the session were encouraged in other ways. Attendees were urged to educate their respective administrations about the importance of the scholarship of teaching and learning, and to help shape policies that reward this work. Junior colleagues were also reminded that senior FUN members can be asked to write letters of support during the faculty review process.

Few specific questions were posed by junior faculty of their more senior colleagues, quite possibly because of time constraints. Alternatively, it could be that the large number of people present prevented less senior colleagues from asking what could be sensitive questions. For example, a more private setting might be more conducive to a question about family/work balance.

Overall, the session was a success. In the future, perhaps an idea-sharing session could be held early in the course of the workshop, to allow attendees to follow up with one another. A separate, possibly smaller session geared toward junior/senior faculty interactions along the lines of a mentoring relationship might also prove useful.

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Address correspondence: Dr. Shelly Dickinson, Psychology Department,
Neuroscience Program, St. Olaf College, Northfield, MN 55057. Email:
dickinss@stolaf.edu.

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