Balance, Da Vinci, TFS and a New Design

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A search for balance has become a national obsession, and this new look and feel of TFS has grown out of a search for balance in presenting positive and practical success ideas to you. And what better way to learn about balance than to consult the genius of Leonardo da Vinci. In How to Think like Leonardo da Vinci, Michael J. Gelb explains how Leonardo used seven principles to energize, enrich and balance his life. If you read this fascinating book, and I hope you will, you will meet and explore the seven principles embraced by da Vinci. They are:

- Nurture unquenchable curiosity.
- Learn from experience.
- Improve your senses.
- Enjoy and explore the unknown.
- Integrate your mind.
- Refine and develop movement.
- Look for connections.

Curiosity

All of these principles have applications to teaching and learning. For example, does your course stimulate or kill curiosity? Is there any room for exploration and discovery? Or, is all the knowledge or skills taught as that which is known absolutely, leaving little or no room for innovation, interpretation, debate, or discussion?

I remember well my first undergraduate physics course. I was very excited to be in a college classroom and laboratory where I expected an atmosphere of scientific discovery to pervade the learning experience, but found instead a dull, lockstep, cookbook approach teaming with boring labs and unimaginative, uninspiring lectures.

Do you cherish and nurture your own curiosity and that of your students? If so, how can you stimulate it everyday?

Experience

Are you learning from your teaching experiences? Do you carry a notebook or journal specifically to record new teaching and learning ideas? New ideas abound in experience, media, books and periodicals. Many superb teaching ideas are adaptations from fields far distant from academics and teaching and learning.

Senses

This term enter your classroom as if you were doing so for the first time. Really take time to observe and sense the learning environment and the students who comprise it. Who are they? What to they project, feel, want, fear and love about your class and learning?

Unknown

One fear common to most teachers is not knowing the answer, or worse, knowing out-dated or incorrect knowledge. Embracing learning means embracing change, error and being willing to be gored by a dilemma.

Whole mind

Is there anyone who hasn’t heard by now of right-brain and left-brain thinking styles and the need to integrate these sections and use the whole mind? The question is what are you doing everyday to facilitate this integration in your mind and that of your students?

Movement

How do you move in your class? Are you rooted to a lecturn or freely roam among students? Have you created opportunities for students to move, especially during afternoon and evening classes? If you have never heard of Qi Gong investigate it; some Qi Gong breathing movements are perfect for a class-break energizer, and they are fun and easy to do.

Interconnections

Discovering connections, causes and effects, and determining the system underlying the teaching and learning process is perhaps the most important principle of teaching improvement. Why do you do what you do in the classroom? Are you sure that what you’re doing is absolutely necessary for learning? What are you not doing? Have you chosen or created a systematic instructional design that guides each learning activity? Have you helped your students make connections between theory and practice and between academia and business?

When you activate these seven principles, you’ll be teaching for success!
How to Evaluate Group Learning Activities

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How many times have you assigned group work in your class only to have that nagging feeling concerning accountability surface? Students often groan when group work is assigned because too frequently they carry the load for their group, yet receive the same grade as those who did little or no work.

Can there be fair group assessments?

Cooperative learning is important in higher education classrooms, but for some, assessment issues have made this instructional technique problematic. Learning to work together for a common outcome seems essential for adequately preparing students for success in today’s collaborative business climate. As educators who prepare learners for the workforce, it’s essential that we provide classroom experiences that will better equip them cognitively and affectively for such tasks, while at the same time diagnose and treat the problem of fair assessment.

Research on cooperative learning (CL) finds that it promotes greater intrinsic motivation to learn higher-level reasoning and longer-term retention. Other outcomes associated with college success include creating a learning community and relationship building among diverse students (Johnson & Johnson, 1993), and improving self confidence, interpersonal and communication skills (Johnson, Johnson, & Smith, 1998).

But how does a teacher go about establishing cooperative learning experiences that students find valuable and meaningful? One key to a successful cooperative learning activity is to be certain that student groups are being equitably assessed.

Challenges

For the learner this means being afforded evaluation procedures that reflect their individual efforts, as well as that of the group’s. A colleague of mine also allows a group to fire a member who is not cooperative or productive. Some instructors have questioned whether group points foster inflated scores. Although the potential is there for such effects, Kaufman and Felder (2000) found that group ratings were not inflated and highly correlated with students’ final grades in the course.

A three-part system

I have found three essential components that work to achieve equitable assessment and student efficacy in cooperative work:

- Peer review.
- Group accountability.
- Individual accountability.

In this model, each person works to produce a group accountability factor. Plus, there are the individual performance ratings and a peer assessment factor. Ultimately, these three scores combine to create a total score representative of the student’s and the group’s functioning within the group-learning process.

Students often groan when group work is assigned because too frequently they have been the ones to carry the load for a group, yet receive the same grade as those who did little or no work.

Get personal

Individual accountability results when each student has an element of the project to do and is scored separately from the group outcome. If the project includes a presentation, this too becomes part of the individual accountability.

For example: Group 1 presents on President Bush’s No Child Left Behind program. Each student takes one element of the law and prepares a handout or paper that is given to the class or the instructor. Individual accountability on the paper, and the group presentation is scored by the instructor using Form A.

Group accountability is achieved by the instructor rating the group on their overall presentation on the topic and the creation process using Form C. This form is designed to be a basic, but clear indicator of who carries the weight in the group. The peer scores are averaged and recorded for each person.

Presentations

If your learning groups are responsible for a class presentation, I have a few suggestions.

continued on page 4
Evaluating Group—continued from page 3

On the day of the presentation, give each group member enough Peer Assessment Grading Forms C for each member of their group. Therefore, if there are five in a group, give each member four sheets, unless you want them to score themselves. (I produce about eight of these grading forms per page and cut them apart to save paper.)

Also, on the day they present or submit their project, give one member of each group one Instructor Scored Group Accountability Grading Form B. Ask the students to fill in each member’s name and the title of the presentation. (I use this grading form to record the details of each member’s presentation.)

As they present

As each group comes to the front to present or submit their project, I ask everyone submit their Peer Assessments Grading Form C and their individual papers. Staple the Peer Assessments together by group and assess the individual papers after the presentation.

Group score sheet

Next, collect the one Instructor Scored Group Accountability Grading Form B from each group and use these forms to record the feedback on the presentation. If you have time, go ahead and assign a score on this sheet for the overall project/presentation. (You can also return to the information you recorded on each individual’s performance when you assign that person’s individual accountability score using Grading Form A.)

After the project’s completion, place each group’s grading forms and papers together in a file folder. At this point, the file will have Grading Form B, and C and the individual papers. Grading Forms A and D are added when you assess the individual paper (Form A) and assign a total score (Form D). This management preplanning recognizes and rewards their efforts while minimizing your potential problems.

Peer points

After the presentations are complete and the dust settles, it is time to start tallying peer assessment points and grading each individual paper.

I begin with the peer assessments and examine each group for any unusual point spreads. If these are found, which are rare, I throw out the high and low scores. Otherwise, I average the scores for each participant and list the score on the Total Points Grading Form D.

The IA Form

Lastly, read and score the individual paper using the Individual Accountability Grading Form A. At this point, each student needs a total score for the project; this is done by totaling the scores from each form and placing this number on the Total Points Grading Form D.

Give this form to the students rather than attempt to return all the grading forms which might be confusing. Keep each form in order to answer any questions the students might have about the scoring process.

In my classes, students repeatedly voice their appreciation for these performance assessments.

The elements I recommend appear to bring clarity and equality to assessing and grading group learning.

Continued on page 5
Evaluating Groups—continued from page 4

Grading forms

The following are three examples of the grading forms that I use. Each could be uniquely crafted to meet the needs of different group projects:

Grading Form A. Individual accountability for paper & presentation
30 points possible:

Name: ____________________________________________

☑ Correct grammar, writing mechanics and spelling. (0-7 pts.) _________
☑ Enthusiasm during presentation. (0-8 pts.) _________
☑ Preparedness in presentation. (0-8 pts.) _________
☑ Three or more references cited using APA or MLA. (0-7 pts.) _________

Comments: ____________________________________________

A. Total Points _________

Grading Form B. Instructor-scored group accountability for group members’ presentation evaluation
10 points possible:

Note: The entire presentation is scored and all members share that score.

Group members (List names): __________________________

Topic/Title of presentation: ____________________________

☑ Topic factually and fully covered. (0-5 pts.) _________
☑ Presentation was interactive. (0-5 pts.) _________

B. Total Points _________

Grading Form C. Peer assessment of members of group presentation
10 points possible:

Evaluator’s Name: __________________________

(Do one sheet for each group member.)

Example:

Group member: John Smith

Possible Earned
☑ Was present at meetings; assisted with the planning. (0 to 3 pts.) 3 pts.
☑ Carried through on assigned task(s). (0 to 3 pts.) 2 pts.
☑ Considered a valued member of the groups. (0 to 4 pts.) 3 pts.

C. Total points: 10 pts. 8 pts.

Grading Form D. Total points awarded for group project/presentation

Note: This is a combination of A, B and C grading forms 50 points possible

Name: ____________

☑ Grading Form A: Individual Accountability Possible Earned
(for paper and presentation). (These points awarded by the instructor.) (0 to 30 pts.) __________ pts.

☑ Grading Form B: Points awarded to the Group. (each member as a unit). (0 to 10 pts.) __________ pts.

☑ Grading Form C: Peer Assessment. (0 to 10 pts.) __________ pts.

Total Points 50 pts. _________

Questions for further discussion and growth:

☑ If you support learning-style preferences, what learning options do you give individual students who would rather complete learning activities on their own?
☑ How do you ensure each group member contributes to the task equally?
☑ What process do you build into your group learning activities to allow serious confrontations and disagreements to be aired and resolved?
☑ What actions should you take immediately when a group is not following productive action steps to reach the desired outcome?

References:
How to Assess Laboratory Learning

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Most of you have a good grasp on what to do for assessing content knowledge learned from the textbook and classroom lectures. However, there is generally disagreement among instructors on how to assess clinic or laboratory learning.

This is not an unexpected state of affairs. After all, laboratory learning is a complex blend on communication proficiency, content, dexterity skills, protocols and social interactions that must somehow be measured using appropriate assessment strategies.

Laboratory assessment can be done adequately in a variety of manners including multiple-choice testing, laboratory reports and skill assessment observations. However, these assessments must test measurable outcomes based on what was taught or carried out during the laboratory session.

Surprisingly, even pen-and-paper tests alone can measure most of the outcomes of laboratory learning. The more difficult to conduct hands-on skills testing can be reserved for two or three well-planned comprehensive assessment sessions.

Create assessment knowledge list

The same care and concerns that go into developing classroom testing must be put into laboratory test design. First it’s important to know what knowledge and skills are being testing.

This must be determined in the design of the laboratory activity. Instructors should have several measurable outcomes listed for each laboratory exercise or experiment. For example, a chemistry laboratory on titration could be designed to measure the following learning outcomes.

Students will:
1. Define an acid and a base.
2. Define molarity.
3. Define normality.
4. Write the stoichiometric reaction of NaOH with sulfuric acid.
5. List the steps of titrating 1M NaOH with an unknown concentration of H₂SO₄.
6. Collect stock solutions without causing contamination to the original solutions.
7. Use NaOH pellets to make the correct molarity solution.
8. Properly mass the NaOH showing how to use a tare and standard.
9. Use the appropriate liquid measuring techniques for conducting the titration.
10. Handle the chemicals with appropriate personal protection equipment.
11. List the steps in properly using a pH meter.
12. Dispose of the chemicals appropriately.
13. Use proper technique to clean the laboratory work area.
14. Record data as called for in the laboratory notebook.
15. Perform the correct calculations to determine the molarity of the sulfuric acid.
16. Corroborate their findings with other students to determine the probable molarity of H₂SO₄.
17. Perform the appropriate statistical analysis to determine the mean, medium and mode of the probable molarity of sulfuric from the class data.

Multiple learning

Wow, seventeen outcomes from one simple laboratory procedure! The list can be tailored for non-science majors, science majors, or chemical technology students. It can also be adjusted to emphasize particular outcomes pertinent to the goals of that laboratory activity. However, just knowing the outcomes does not mean that the assessment instrument is accurately determining student achievement.

Merging with test design

This is where proper test design becomes an important factor in measuring laboratory learning. Building a test that appraises higher-order learning is important in bringing out the full learning experience of laboratory activities. Again, this can be done using laboratory observations, traditional tests, and written assignments. Laboratory observations should have an outcomes check sheet that objectively measures delineated skills.

Delineated skills means actions that represent proper laboratory techniques.

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Laboratory Assessments continued on page 7
Assessing delineated skills

For example:

1. (Detailed Skills) The student properly measures volume with a graduated cylinder:
   - Student uses a clean cylinder.
   - Student reads the bottom of the meniscus.
   - Student reads the meniscus consistently.
   - Student collects the correct measure.
   - Student transfers entire volume.
   - Student cleans cylinder and returns to storage location.

Assessing general skills

2. (General Skills) The student properly performs titration setup:
   - Student uses graduated cylinder to measure volume.
   - Student approximates proper use of graduated cylinder.
   - Student transfers solution to appropriate titration glassware.

Assessing higher-order skills

When using traditional testing the following questions are typical of those that assess higher order thinking:

- Interpret the following data (comprehension).
- Describe the reaction between NaOH and sulfuric acid (comprehension).
- Apply the principles of titration to the following reaction... (application).
- Classify the following chemical reactions... (analysis).
- Identify the cations in the following titration... (analysis).
- How would you perform the following titration... (synthesis).
- Evaluate the results of the following titrations... (evaluation).

A Need for objective and subjective questions

Traditional test questions can have directed answers as in the examples given above. They could be formatted as fill in the blank, multiple choice, or short answer. It is advisable to provide open-ended questions that evaluate the student’s logic and reasoning skills. Written assignments are a good way of evaluating student knowledge, comprehension, application, analysis, synthesis and evaluation within one assessment instrument. Plus, it permits you to assess student communication and writing skills. However, the assignment must be supplied with a format that looks at these levels of students’ understanding. Standard laboratory reports can be supplemented with questions that assess these degrees of learning. You may wish to do creative thinking projects such as student forums about the data, student presentations to class, or poster sessions.

Formative testing

You should use formative testing to ensure that students have the minimum knowledge and skills needed to accurately and safely carry the laboratory session. Formative testing is generally used solely for providing students with feedback about their knowledge. You have the option of giving grades for this evaluation.

However, it should be a learning experience and not a penalty for the students. Formative evaluation can also be used in earlier laboratory assessment where students can learn the expectations without too much penalty.

At the end of a major learning segment, a graded comprehensive or summative evaluation should be reserved for the function of confirming competence after students complete one or more related laboratory sessions.

Publisher’s Note

Welcome to the All New TFS.
Our goal is to make TFS easier to read and use. We wondered; why should Electronic edition readers have to contend with a tall document on a wide screen? We promise to feature positive, practical, success ideas that will help you and your students derive more enjoyment and satisfaction from teaching and learning. Please send me your reactions and suggestions. My address is <jack@teachingforsuccess.com>.
Reviews Boost English Grammar Instruction

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An injustice occurs when you do not give grammar reviews to your English students. I realize that some hold the belief that if the student is allowed to register for English 101, the student should possess a fine command of the language, meaning that the student is an amateur grammarian. The truth of the matter is that objective placement tests are flawed, so they cannot accurately detect a student’s grammatical shortcomings (unless, of course, the student receives an ambiguous score, and as a result, writes a sample essay in order to determine his or her appropriate placement).

More importantly, many students were not taught grammar in high school; in fact, many of them were barely taught grammar in grade school, which, as we know, was originally called grammar school. I know this phenomena is real, for I’ve seen looks of utter confusion when I referred to rudimentary grammatical terms such as main clauses, prepositional phrases, and subordinating conjunctions. We need to teach them:

- How to avoid writing fragments.
- The solutions to run-ons and comma splices.
- The comma rules, subject-verb agreement, parallelism, and how to effectively rewrite awkward sentences.
- How to avoid “get, got, getting, gotten”
- To define “this,”
- How to use strong synonyms, pronouns, and adjectives instead of the vague “it.”

We must teach them all of these things, because you and I may be the first and only persons to ever set them straight on grammar.

Imaginative reviews

It’s imperative to make grammar reviews lively. Use metaphors and visual aids in order to clarify grammatical rules. For example, I employ a visual aid when I draw a balance scale containing red grapes and green grapes in its respective balance dishes on the blackboard; the grapes have equal weight.

At the top of the balance scale, I draw a semicolon and say that the punctuation mark is the pivot upon which two main clauses containing closely related subject matter “swings” or is properly connected.

You should also use sentences from your students’ papers in order to help them identify their writing problems. Set aside class time for writers’ workshops that emphasize peer evaluation, and offer your students the option of submitting thoughtful rewrites of their papers.

If they still do not completely understand how to correct their grammatical errors, give them a repeat review—especially on run-ons/comma splices.

Then, if they fail to understand, or do not care to understand your reviews, give them the appropriate grade for papers filled with bad grammar.

We should bring our students up to speed on grammar before we place them through the race of essays for the semester.

If students effectively learn how to correct their writing problems, we can then save ourselves from the frustration of wasting time marking their papers for grammatical errors.