New Faculty Orientation "Active Learning & Classroom Assessment"

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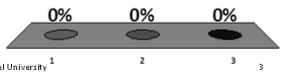
Program Director, BS Entertainment & Arts Management

Overview

- Using Clickers for classroom assessment (and analysis)
- Active Learning:
  - Student-run enterprise
  - Discussion of student research
  - Internships
  - Student Presentations
  - Games/Simulations

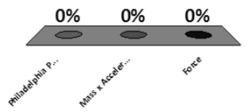
I previously…

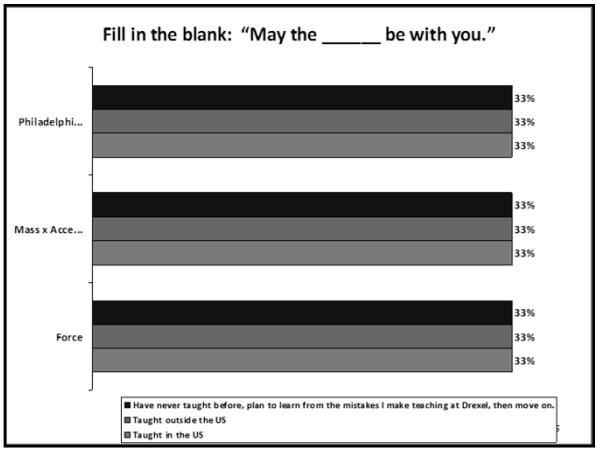
1. Taught in the US
2. Taught outside the US
3. Have never taught before, plan to learn from the mistakes I make teaching at Drexel, then move on.



Fill in the blank: "May the _____ be with you."

1. Philadelphia Phillies, because that's the correct answer to every question.
2. Mass x Acceleration
3. Force





Student run enterprise

- Students participate in running a business/organization including:
  - Creative
  - Marketing
  - Finance
  - Distribution

Student run enterprise (cont'd)

- Benefits
  - Teaches collaborative skills
  - Well regarded by employers
- Issues
  - Can create significant workload for faculty
  - Student turnover can disrupt operations
  - Requires $$$

Research papers

- Biweekly short papers on an assigned topic
  - 500-600 words
  - Current issues in media/entertainment
  - Small class (approx 15 students)
  - In-class discussion, occasionally with guest faculty

Research Papers (cont'd)

- Benefits
  - Students very motivated
  - 100% participation in class discussion
  - Very positive feedback
  - Writing practice
- Issue - More difficult in larger classes
  - Full participation in class discussion can be difficult in allotted time
  - Workload to grade papers without teaching assistant support

Part-time Internships

- Available to sophomores, juniors & seniors
- Employers are local companies & organizations
- Must be a learning experience (not just copies and coffee) for academic credit
- Graded final work product required
- Student & employer must fill out application for my approval

Part-time Internships (cont'd)

- Benefits:
  - Students get to apply what they are learning, assess different career paths, find mentors
  - Builds program's relationship with potential guest speakers, part-time instructors, network
- Issues
  - Not all students can participate
  - Job may turn out to not be meaningful – how to grade?
  - Lots of hours of work for few credits

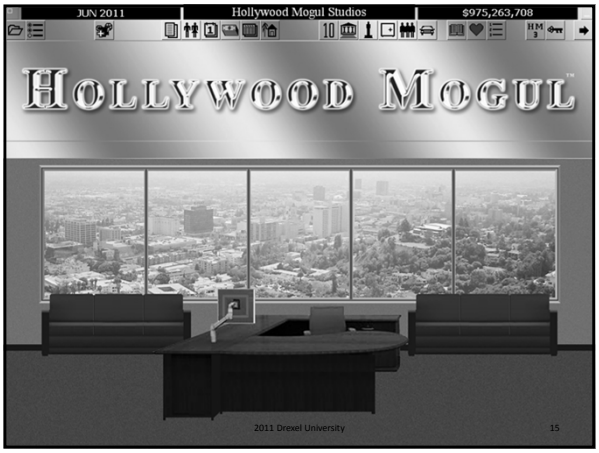
Individual/Group Presentations

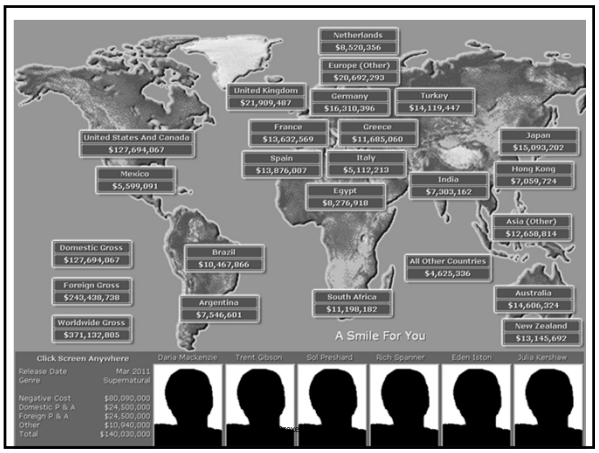
- Used at all levels in all courses I teach
- "80% of success is showing up" – Woody Allen
- Students hate them
- Benefits - Teach valuable skills:
  - How to prepare
  - How to work in groups (some selected by students, some by instructor)
  - How to communicate effectively

Individual/Group Presentations (cont'd)

- Issues:
  - Group Presentations:
    - Weak students benefit from work of others
    - Strong students suffer from the lack of work of others
  - Makes students very harsh critics of my lectures ☺
  - Did I mention that students hate them?
  - Can consume much class time

Games & Computer Simulations





The Booking Game

BOOKING CALENDAR
NAME: Team Danger

Calendar	City	Contracted Amount	Miles
HOME CITY	New York		
			2784
1	Los Angeles	11,000	
2	Hotel	- 3,000	
			2184
3	Cincinnati	9,000	
4	Hotel	-2000	

Games/Computer Simulations

- Benefits
  - Interrelationship between/amongst decisions and external factors
  - Millennial students
  - Fun!
- Issues
  - Learning curve
  - For computer simulations
    - Hardware issues
    - Software issues

Contact me!

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New Faculty Orientation 2011

Active Learning Techniques and Classroom Assessment Techniques

Daniel King

Associate Professor

Chemistry Department

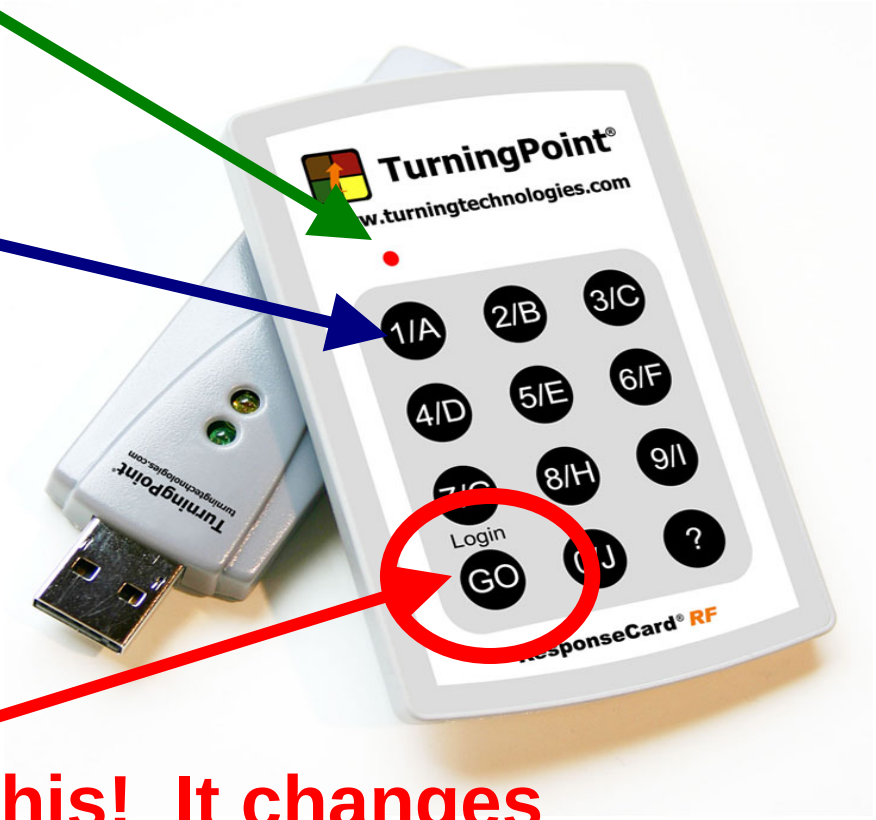
In-class technology used

- personal response systems (clickers)
  - each student assigned one device
  - questions integrated into lecture
    - 2 - 4 clicker questions per 50-min lecture
  - group results displayed in real time
  - responses recorded

Clickers

Green when response is registered

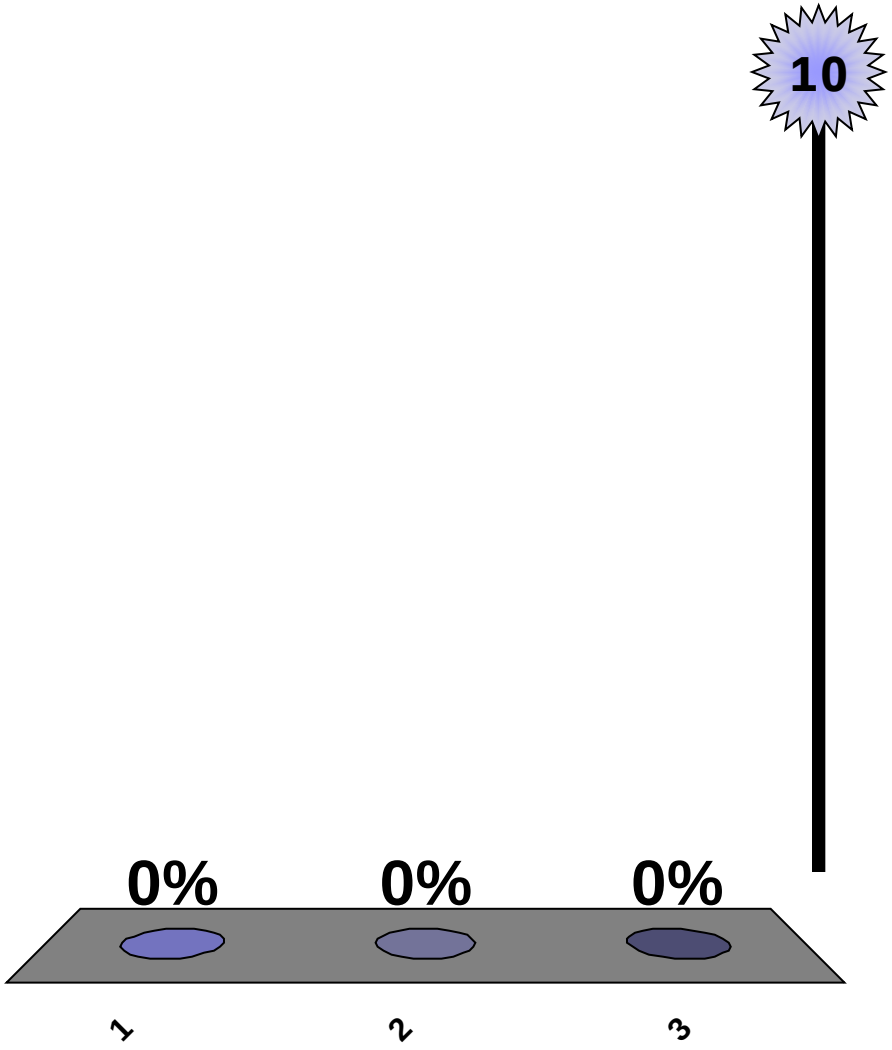
To Respond



Don’t press this! It changes the frequency.

Which glow stick will be brighter?

1. in ice bath
2. in warm water
3. both will have same brightness



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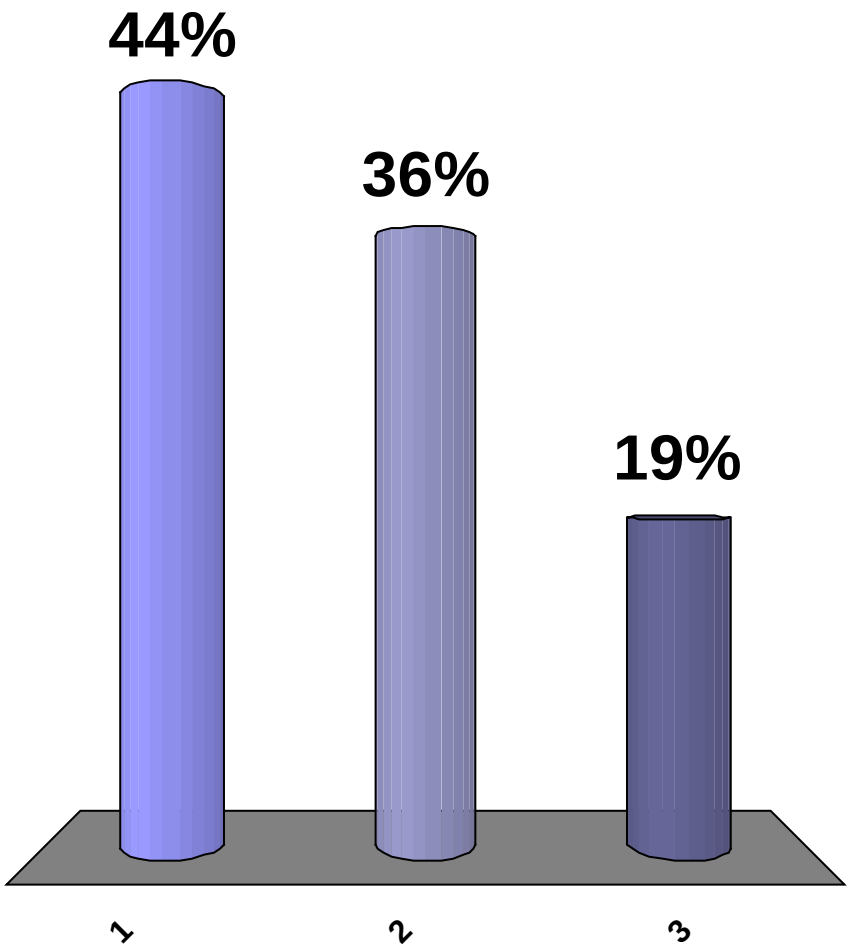
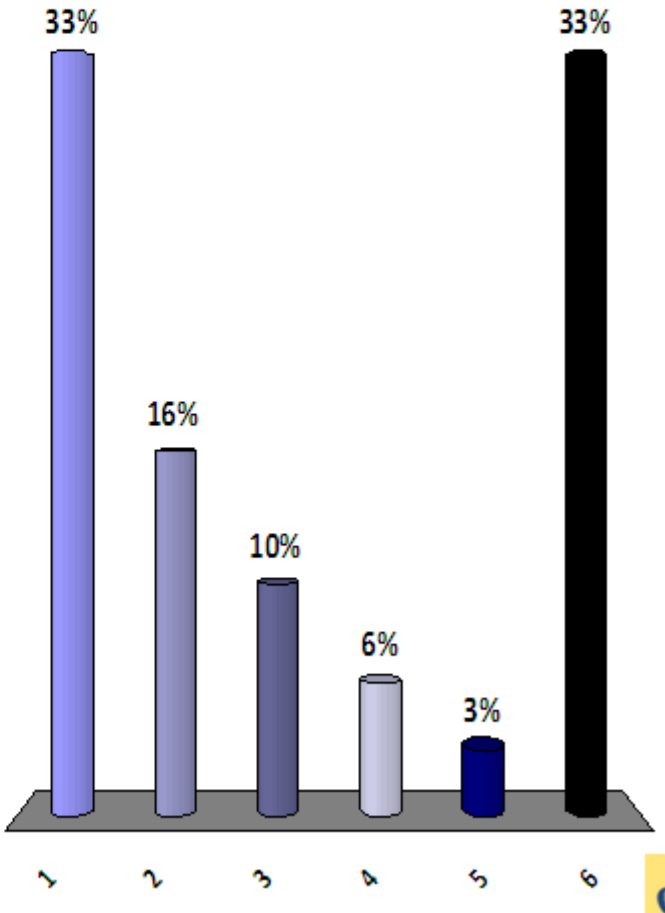


Identify the "muddiest point" from today's lecture.

1. integrated rate law
2. using graphs to determine order
3. activation energy
4. temperature effect
5. catalyst
6. none – I understood everything today

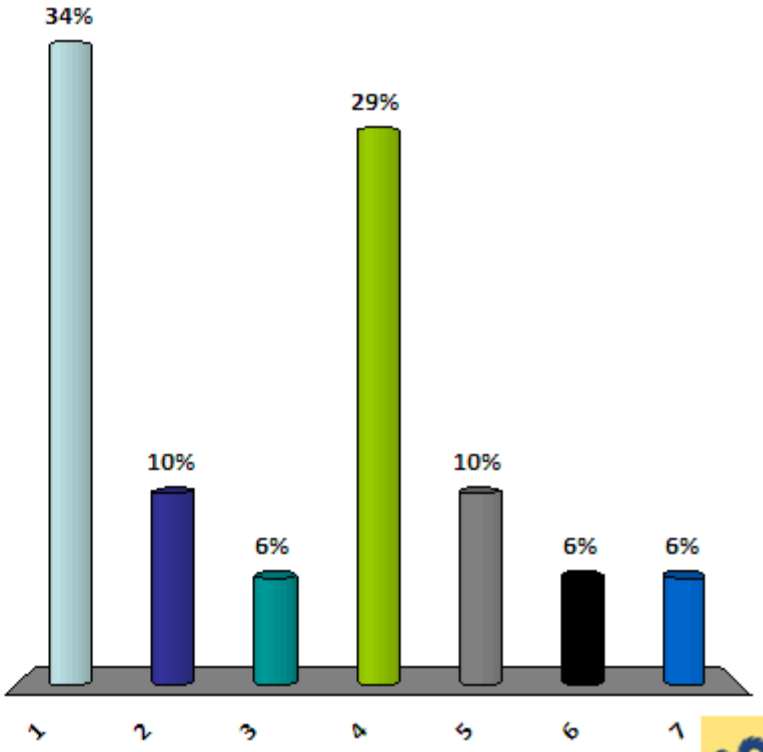


The compound SO_2Cl_2 decomposes in a first order reaction: $SO_2Cl_{2(g)} \rightarrow SO_{2(g)} + Cl_{2(g)}$ with half life of 4.47×10^4 s at 600 K. If the reaction is begun with 1.6×10^{-3} mol of pure SO_2Cl_2 in a 2.0 L flask, at what time will the amount of SO_2Cl_2 be 1.2×10^{-4} mol?

Which equations will you need to answer this question?

(choose all that apply)

1. $\ln[SO_2Cl_2] = -kt + \ln[SO_2Cl_2]_0$
2. $[SO_2Cl_2] = -kt + [SO_2Cl_2]_0$
3. $1/[SO_2Cl_2] = kt + 1/[SO_2Cl_2]_0$
4. $t_{1/2} = 0.693/k$
5. $t_{1/2} = [SO_2Cl_2]_0/2k$
6. $t_{1/2} = 1/k[SO_2Cl_2]_0$
7. $PV = nRT$



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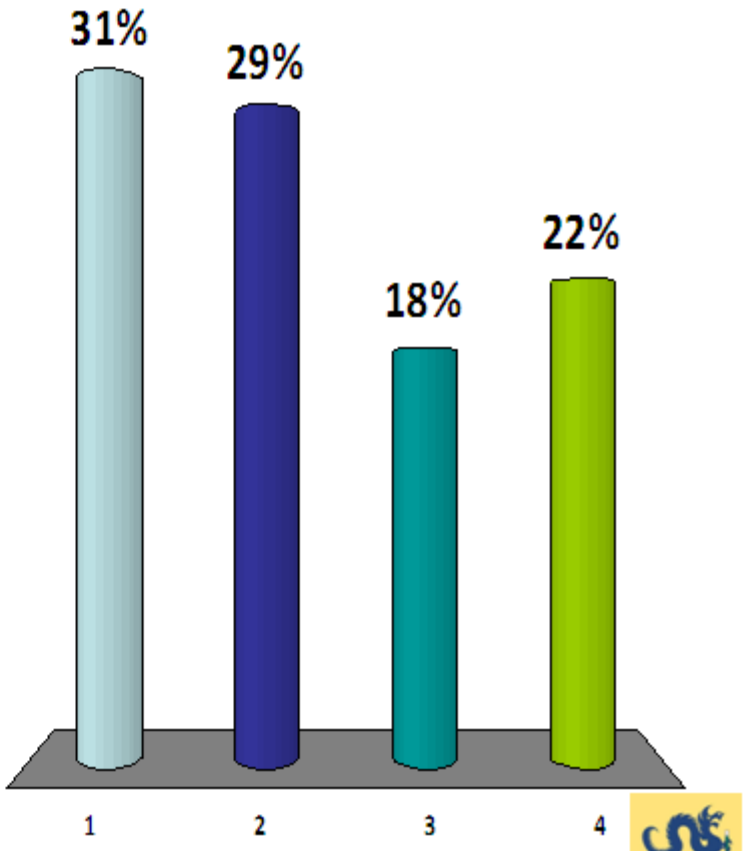
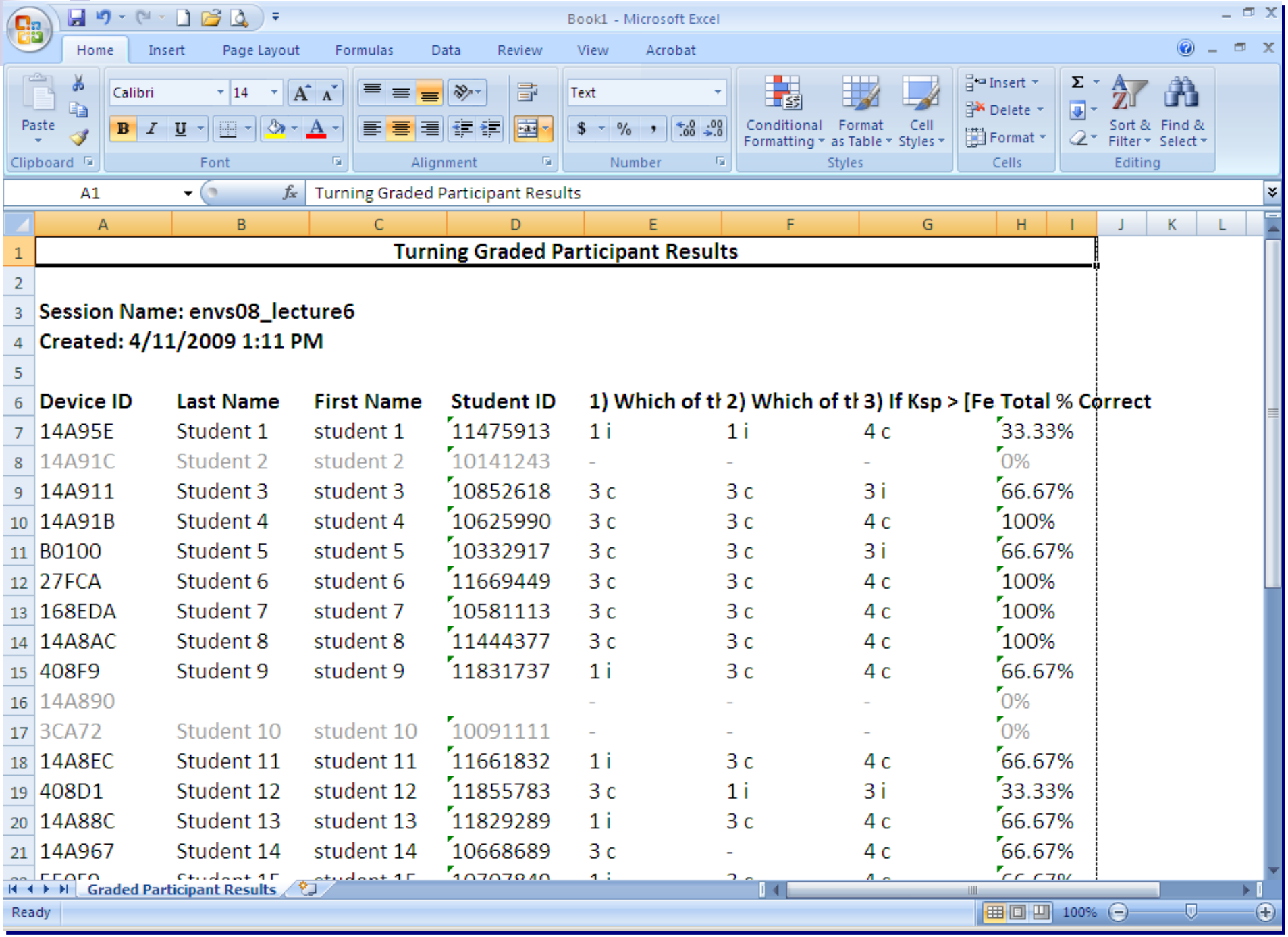
1. 1.67×10^5 s
2. 5.98×10^{-6} s
3. 9.97×10^5 s
4. 5.96×10^4 s



Clicker Benefits

- Improved feedback
  - all students can participate at same time
  - participation is anonymous to peers
  - large amount of information
    - instructor learns what students know
    - students learn what they know
    - students learn how they compare to classmates


Book1 - Microsoft Excel
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Delete
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Sort & Filter
Find & Select
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Turning Graded Participant Results
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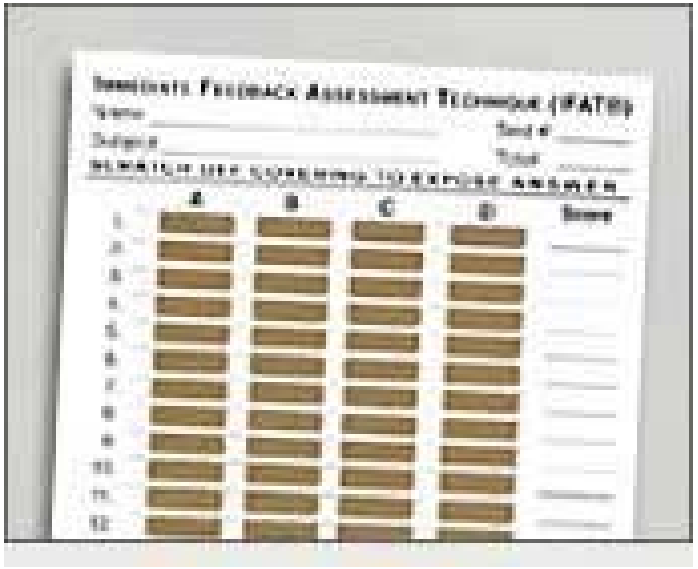
Device ID | Last Name | First Name | Student ID | 1) Which of th | 2) Which of th | 3) If Ksp > [Fe | Total % Correct
14A95E | Student 1 | student 1 | 11475913 | 1 i | 1 i | 4 c | 33.33%
14A91C | Student 2 | student 2 | 10141243 | - | - | - | 0%
14A911 | Student 3 | student 3 | 10852618 | 3 c | 3 c | 3 i | 66.67%
14A91B | Student 4 | student 4 | 10625990 | 3 c | 3 c | 4 c | 100%
B0100 | Student 5 | student 5 | 10332917 | 3 c | 3 c | 3 i | 66.67%
27FCA | Student 6 | student 6 | 11669449 | 3 c | 3 c | 4 c | 100%
168EDA | Student 7 | student 7 | 10581113 | 3 c | 3 c | 4 c | 100%
14A8AC | Student 8 | student 8 | 11444377 | 3 c | 3 c | 4 c | 100%
408F9 | Student 9 | student 9 | 11831737 | 1 i | 3 c | 4 c | 66.67%
14A890 | | | | - | - | - | 0%
3CA72 | Student 10 | student 10 | 10091111 | - | - | - | 0%
14A8EC | Student 11 | student 11 | 11661832 | 1 i | 3 c | 4 c | 66.67%
408D1 | Student 12 | student 12 | 11855783 | 3 c | 1 i | 3 i | 33.33%
14A88C | Student 13 | student 13 | 11829289 | 1 i | 3 c | 4 c | 66.67%
14A967 | Student 14 | student 14 | 10668689 | 3 c | - | 4 c | 66.67%
Graded Participant Results
Ready
100%

Lower-tech feedback



IF-AT forms
(Immediate Feedback Assessment Technique)

Epstein Educational Enterprises
http://www.epsteineducation.com

- Need additional information?
- Interested in trying clickers or IF-AT forms?

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Disque 509

Maximizing Student Learning: Frequent, Low-Stakes Grading

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A culture of assessment/feedback

Assessment/feedback everywhere

- We live in an assessment-based culture
- Think about how students crave feedback
  - *They want to know how they are doing*
  - Lots of classics in the grade literature predate our era
- Disparate fields—athletics, medicine, business—use the evaluation/assessment process to develop dialogue and help build student/learner/consumer confidence
  - Publisher's materials, games

Culture of grading in school

- Often infrequent, high-stakes (Google search)
  - Grading as a “pedagogical whip” (Filene)
  - Big exams, term papers—and bigger standardized tests
- “We typically think of assessment as an index of school success rather than as the cause of that success” (Chappuis and Stiggins)
- Curves pit students against each other, fostering strategic rather than deep learning (Bain)
- Grade inflation, cheating, plagiarism

Frequent, low-stakes (FLS) grading

- Give lots of grades: Individual grade doesn't mean much
  - Simple numerical grades or similar system
- **Dialogue:** Establishes productive student-teacher conversation
  - Students have an ongoing answer to "How am I doing?"
- **Confidence:** Provides students with many opportunities to succeed
  - Expectations, consistency, predictability
- **Motivation:** Fits into students' conceptions—and, perhaps, expectations—of assessment

FLS grading

- Assessment can be a feedback tool focused on learning (Stiggins)
- Their doing the work is the important part, not our grading of it
  - WAC (writing across the curriculum) describes the value of this approach (Fulwiler and Young)
- Learning technologies can be a big asset
- Rubrics can help demystify grading, for student and teacher (Arter and McTighe)

Some counterpoints

- Formative “assessment for learning” approaches—*some* contradictions
- Grades can “exert surprisingly little effect on learning” (Filene)
- Grades can obstruct student-teacher interaction
  - Especially as assessment has been intertwined with standardized testing (Amrein and Berliner)
- Overemphasis on grades
  - “When the classroom culture focuses on rewards, ‘gold stars,’ grades, or class ranking, then pupils look for ways to obtain the best marks rather than to improve their learning”
  - “… if pupils are given only marks or grades, they do not benefit from the feedback”; maybe entering a cycle of failure (Black and Wiliam)
- Extrinsic and intrinsic motivation (McKeachie)

Yet…

- In an ideal teaching world...
  - It’s all formative
  - Perhaps even one-on-one
  - Maybe no grades at all
- We’re not in an ideal teaching world
  - In most cases, we still have to administer grades, so the question becomes: How do we do it well?
- Extrinsic and intrinsic crossover

FLS: A different conception of the function of grading

- FLS grading has a more summative structure
  - But I'll stick up for its formative aspects too
- Risk
- Discouraging plagiarism/cheating
  - Remember, *low-stakes*
- Building a discourse between you and the student as part of your response strategy
  - You still have major papers
  - You still have major exams
  - Series of low grades is a sign that you need intervention
  - Teachers are busy: FLS grading can actually result in less work overall if done right, as the dialogue initiates through the grades

Methods

- Your course might be:
  - Three big papers: 75%
  - Exam: 20%
  - Participation: 5%
- With FLS grading, it might look like this:
  - Three big papers: 60%
  - Exam: 10%
  - Informal work: 20%
  - Quizzes: 10%
- Online, my informal work can be 40%

Methods

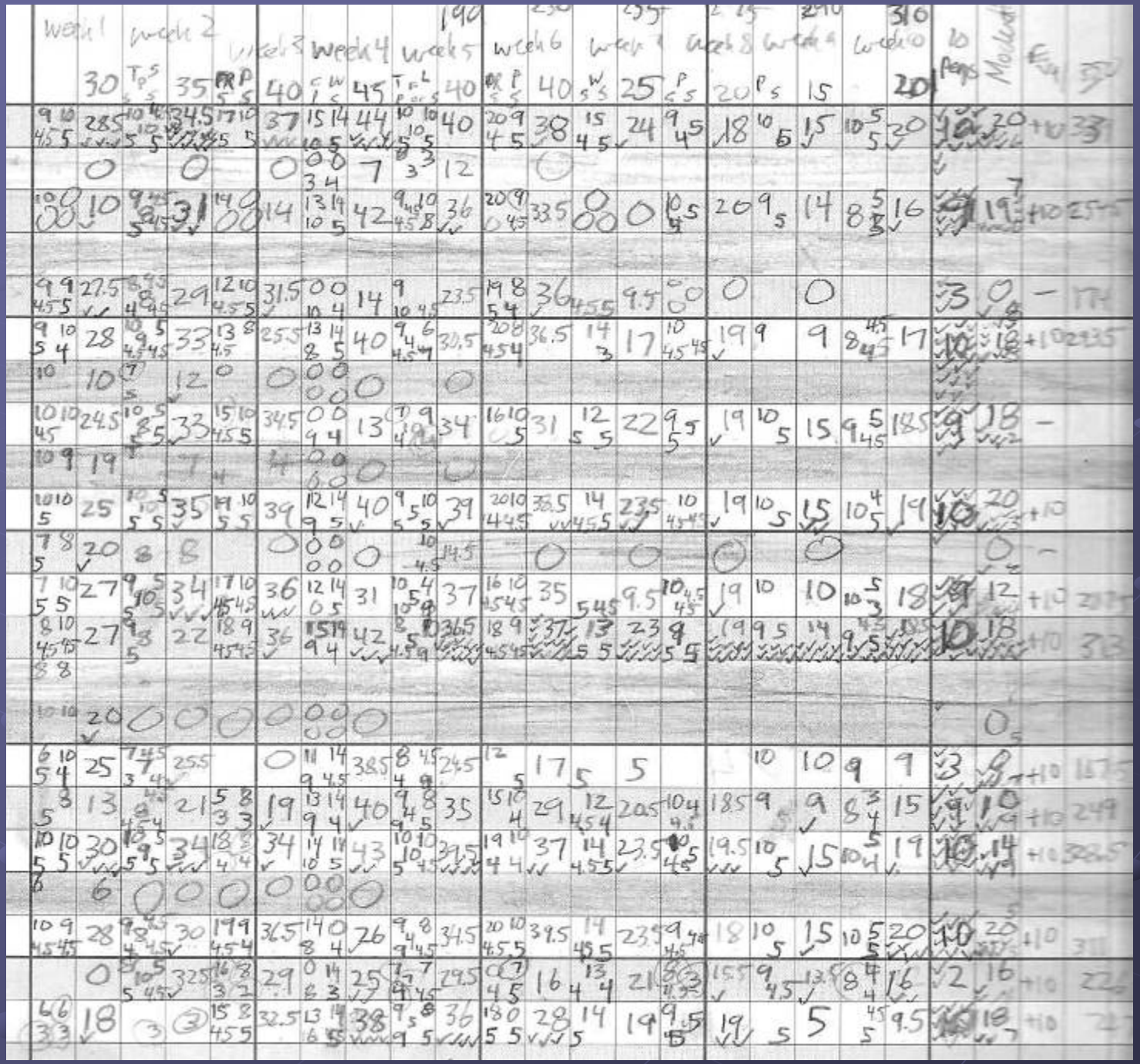
1. Frequent short assignments/short writing assignments
- WAC philosophy: Remember what you're trying to accomplish
  - Homework
  - Free-writes about a content point, responses to reading
  - Minute paper, end-of-class notes on three most important or confusing points, questions
  - Journals (structured, semistructured, or open-ended)
    - Blogs
  - Brief annotations or written notes of calculations, charts, tables
  - Metacognition: Think through reasoning, thinking, writing processes
  - Message boards: Great asynchronous tool

Methods

2. Quizzing
   - In or out of class
   - *Simple* quizzes that are easy to administer, take, and grade
   - Mid-class quizzes
   - Grading could be automated
   - Again, remember your purpose
     - Frequent reading quizzes for communication, confidence, community (Warnock, “Quizzing…”)

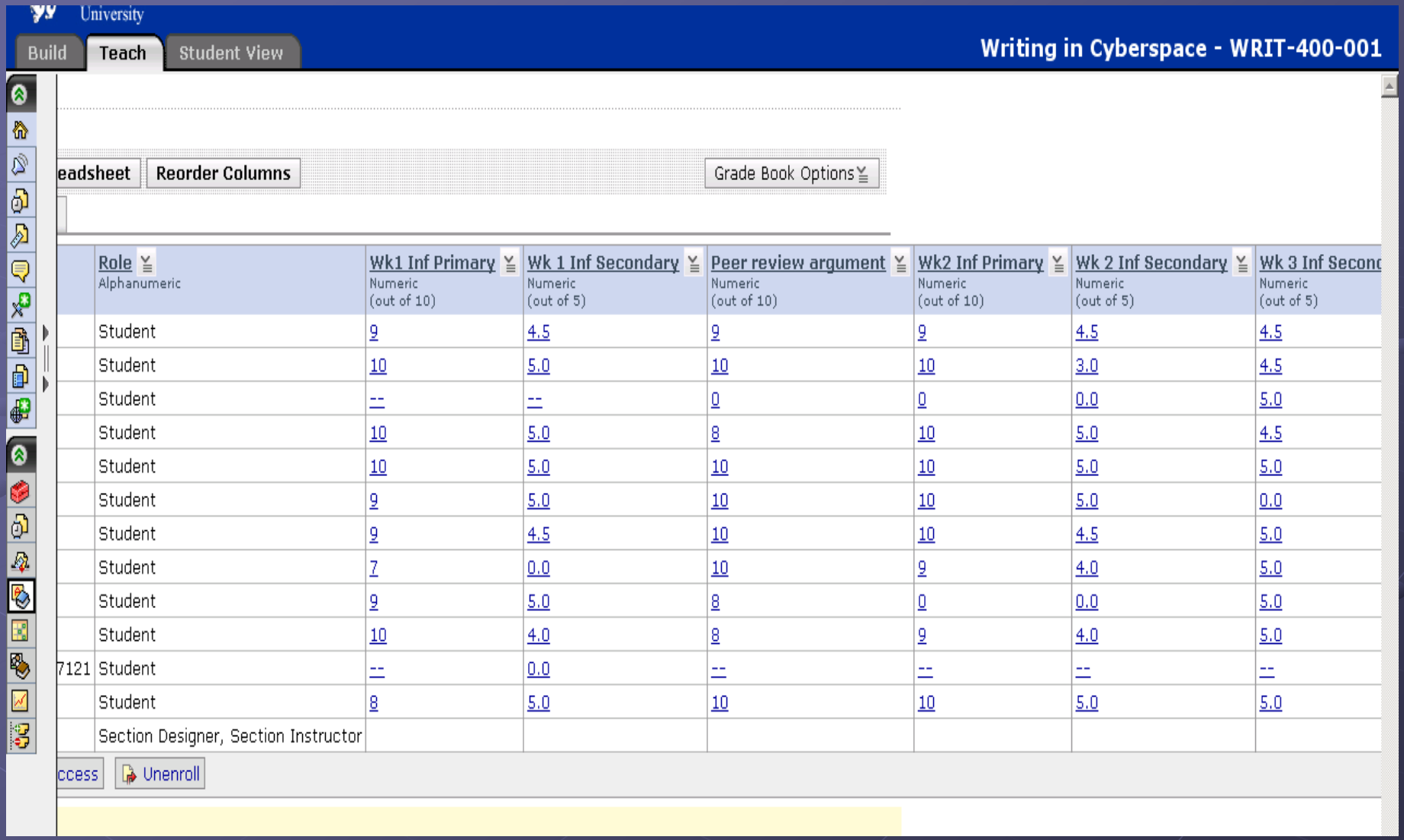
Feedback and record-keeping

- Question 1.A: How do I do this without breaking my back?
- *Simple* scale
  - 1 to 3, 1 to 5, 1 to 10 scale
  - √+, √, √-
- Recorded, displayed
  - In a hard-copy grade book
  - In an Excel spreadsheet
  - In your course management system grade book
- Peer grading
  - Quiz swaps
  - Message board point distribution system


week 1
week 2
week 3
week 4
week 5
week 6
week 7
week 8
week 9
week 10
10 Reps

Technology-mediated response

- Applications can simplify logistics
  - Ease submissions and grading
  - Online assessments allow for simple features like question sets
- Technology can facilitate writing/classroom community
- Rubric creation tools: Rubistar, Waypoint
- Clickers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eadsheet
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Wk2 Inf Primary
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Wk 2 Inf Secondary
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Section Designer, Section Instructor
ccess
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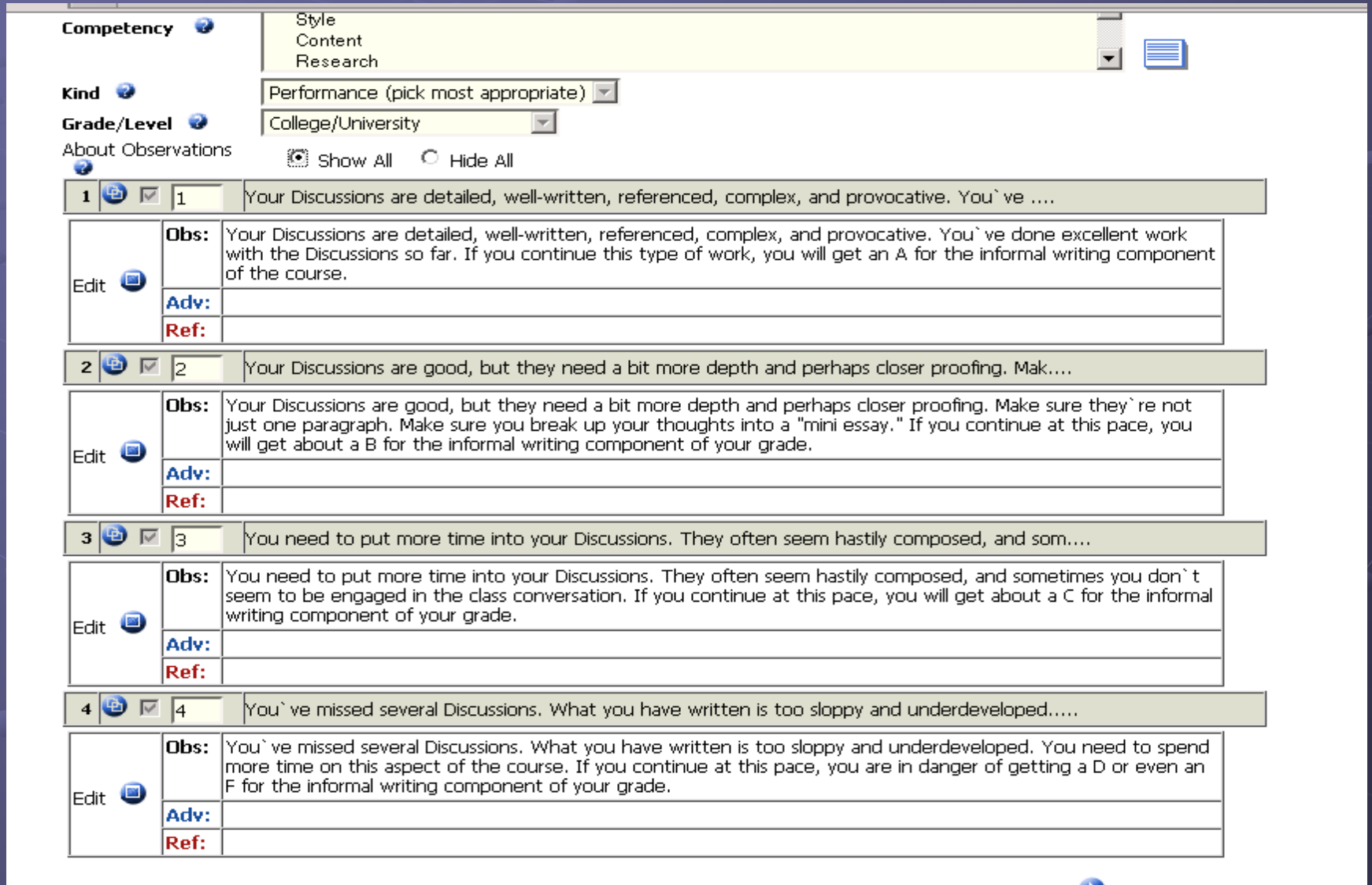
Rubrics

- Lots of talk and discussions about rubrics
- Rubric for brief response writing:
  1. Did they demonstrate understanding of the chapter (1-5 scale)?
  2. Quality of their writing (1-5 scale)
  - You can eyeball it
- What do you want the assignment to accomplish?
- Simple things that you want to assess
  - Relevant to the assignment, content-oriented, very specific
  - What don't you want to worry about?
- Performance levels
  - What do you say to examples of a range of student responses? (this can be hard to do)

Simple, focused criteria and language for each level



Competency: Style, Content, Research

Kind: Performance (pick most appropriate)

Grade/Level: College/University

About Observations: Show All / Hide All

1	1	Your Discussions are detailed, well-written, referenced, complex, and provocative. You`ve ....
Edit	Obs:	Your Discussions are detailed, well-written, referenced, complex, and provocative. You`ve done excellent work with the Discussions so far. If you continue this type of work, you will get an A for the informal writing component of the course.
	Adv:	
	Ref:	
2	2	Your Discussions are good, but they need a bit more depth and perhaps closer proofing. Mak....
Edit	Obs:	Your Discussions are good, but they need a bit more depth and perhaps closer proofing. Make sure they`re not just one paragraph. Make sure you break up your thoughts into a "mini essay." If you continue at this pace, you will get about a B for the informal writing component of your grade.
	Adv:	
	Ref:	
3	3	You need to put more time into your Discussions. They often seem hastily composed, and som....
Edit	Obs:	You need to put more time into your Discussions. They often seem hastily composed, and sometimes you don`t seem to be engaged in the class conversation. If you continue at this pace, you will get about a C for the informal writing component of your grade.
	Adv:	
	Ref:	
4	4	You`ve missed several Discussions. What you have written is too sloppy and underdeveloped.....
Edit	Obs:	You`ve missed several Discussions. What you have written is too sloppy and underdeveloped. You need to spend more time on this aspect of the course. If you continue at this pace, you are in danger of getting a D or even an F for the informal writing component of your grade.
	Adv:	
	Ref:	

Applying rubrics

- Spell the rubric out to students, but…
- … these can be applied *conceptually* as you work through student materials.
- I gave 60 grades some terms; a lot of grades may be something different for you.

Conclusions

- “For better or worse, grades matter; the challenge is how to make them work for your purposes” (Filene)
- Demystifying course assessment: How can students not know how they are faring in a course?
- Can you deploy an FLS method that works for you to create a conversation via a cycle of grades?

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