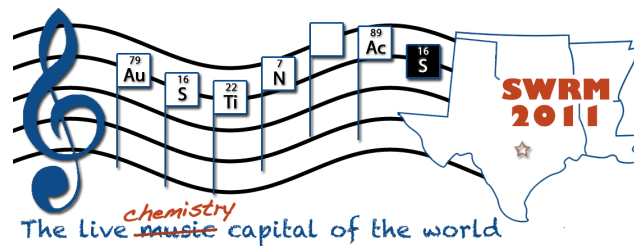


SWRM Presentation Slides: Friday, Nov 11th, 2011 11:40-12:00

Symposia:

Chemical Education Research: Advances
and Limitations of Classroom
Technology



SWRM

11 November 2011

(SWRM347)

The New Online Paradigm –

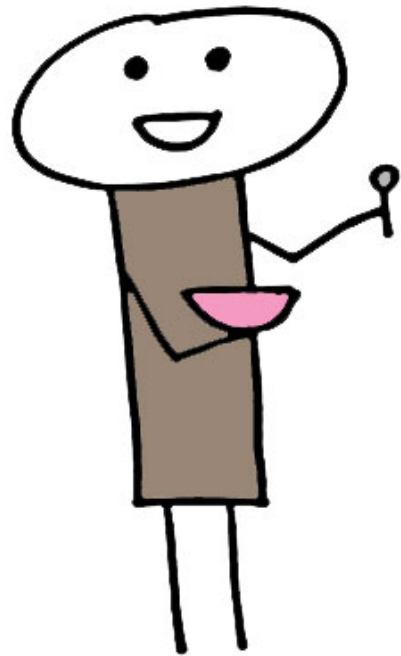
Giving students what they NEED, not what they WANT

Dr. JJ Lagowski

Dr Brad Herrick



now in cereal



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search ID: jdin326

“I always choose immediate gratification over vague rewards at some unspecified time in the future.



“Rewards”

What about the "carrot"? Don't rewards provide an incentive for students to behave appropriately and perform well?



“Rewards”

Contrary to the conventional wisdom, rewards are no more effective than threats and punishment. Kohn (1993) cites hundreds of studies suggesting that such incentives as stickers, pizza parties, free time, trips to the toy barrel, and A's do not work.



“Rewards”

When a student hears, "If you do this, then you'll get that," he or she gets the message that "there must be something wrong with *this* if you have to give me *that* to get me to do it."



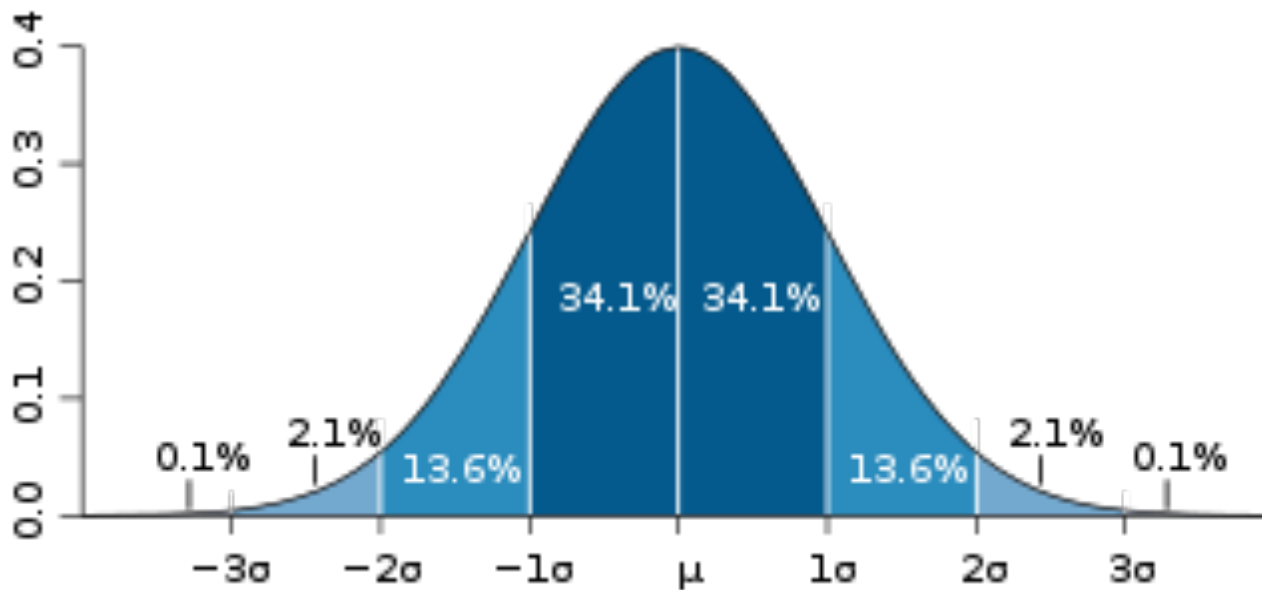
“Rewards”

When a student hears, "If you do this, then you'll get that," he or she gets the message that "there must be something wrong with *this* if you have to give me *that* to get me to do it."

Thus, by offering a reward for learning or following classroom rules, we may unintentionally "kill off the interest in the very thing we are bribing them to do."



“No Child Left Behind”





What they need...

- A deep conceptual understanding
- A practical application understanding
- Reward *performance, not trying*



Difficulties

- Classes of ~500 (your available time)
- Different learning styles
- Lifestyle
 - Work schedules
 - Commuting/Parking
 - Socioeconomic Issues
 - Single Parents and Nontraditionals

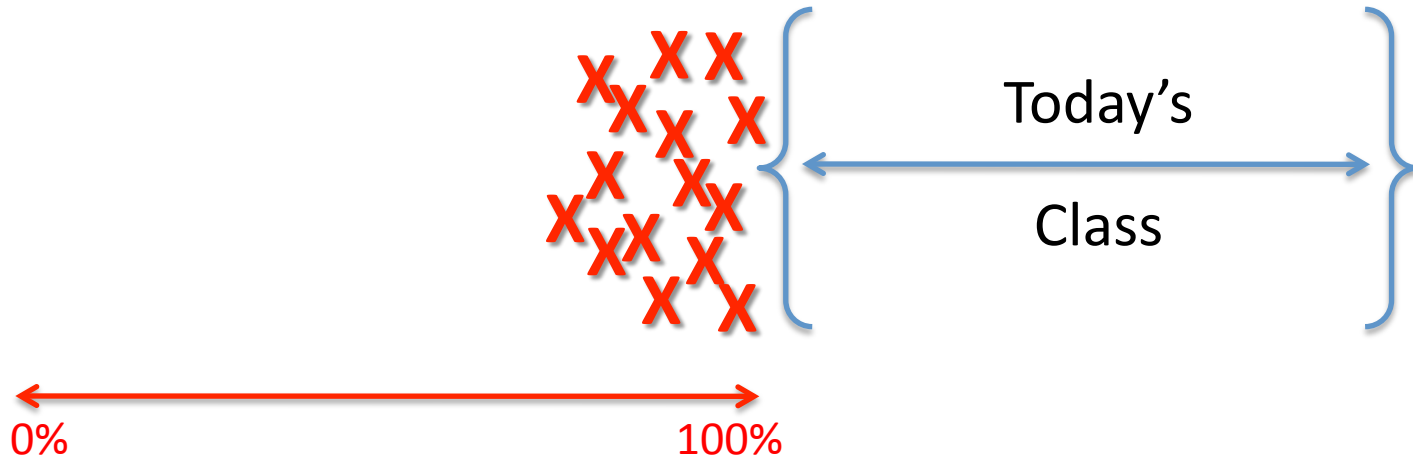


What can we do?

- Don't accept the status quo any more...
 - Turn 1 class of 500 into 500 classes of 1
 - **STOP!**
- Make the process transparent
 - They are **NOT** all the same...



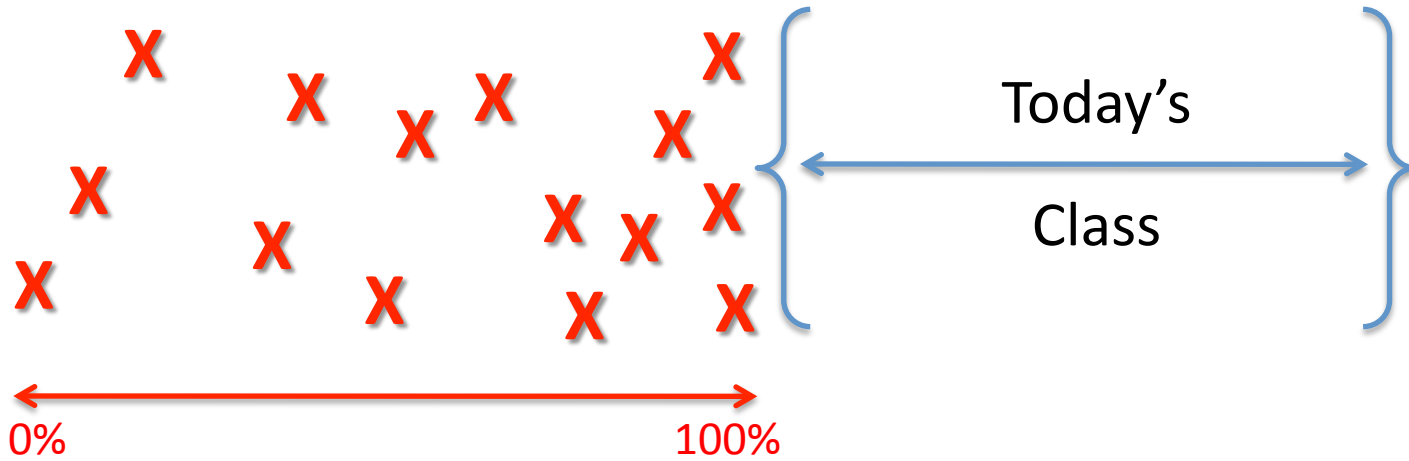
The Delusion



ASSUMED
Preparation Level



The Reality



ACTUAL
Preparation Level

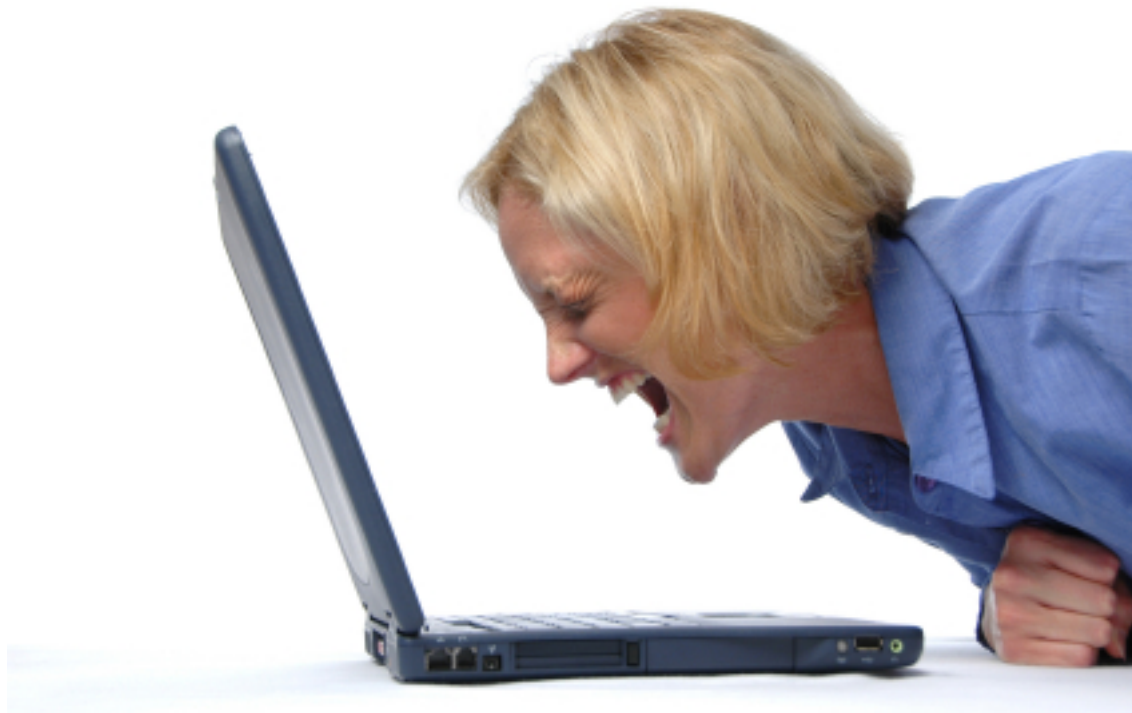


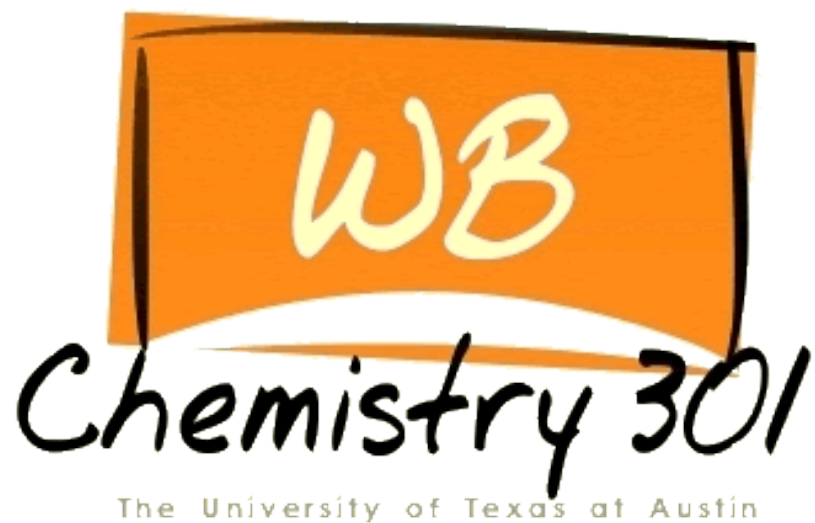
What can we do?

- Don't accept the status quo any more...
 - Turn 1 class of 500 into 500 classes of 1
 - **STOP!**
- Make the process transparent
 - They are **NOT** all the same...
- Hybrid or Online course support
 - Prepare them outside the classroom for a better classroom experience

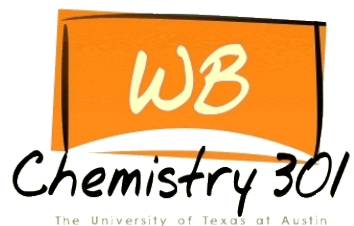


Make the computer
the “Bad Guy!”



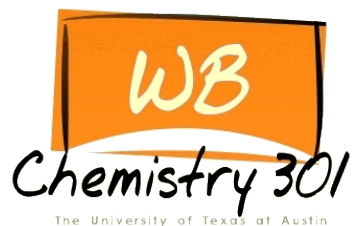


**Our current online GenChem
and dual-credit course**



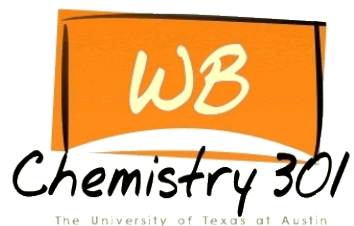
Core Concepts

All students are considered
“at-risk”
until THEY
prove otherwise



Core Concepts

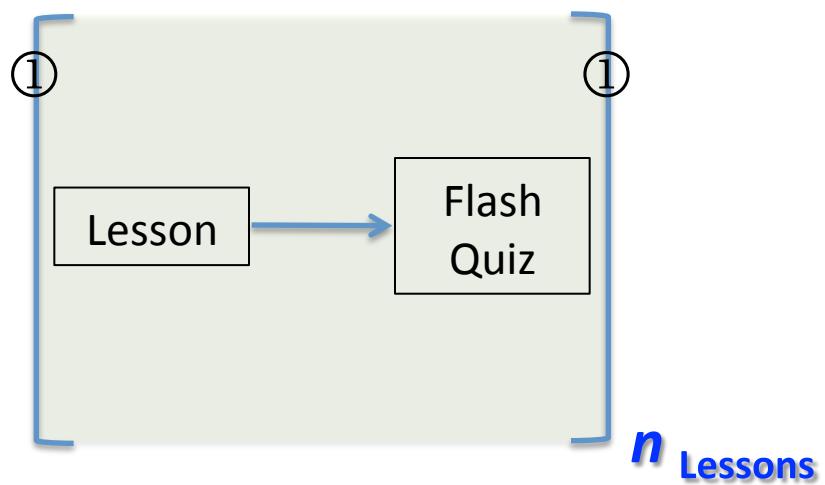
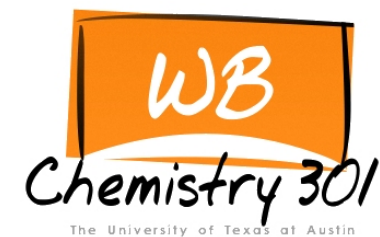
Give them what they need
when they need it



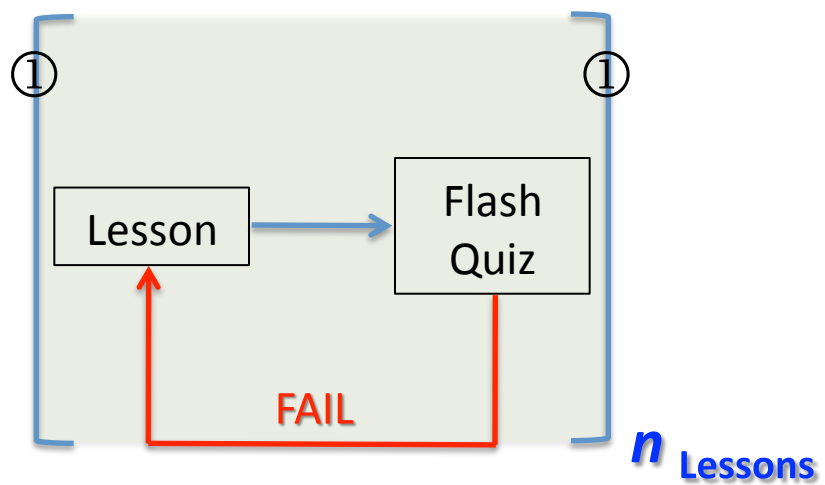
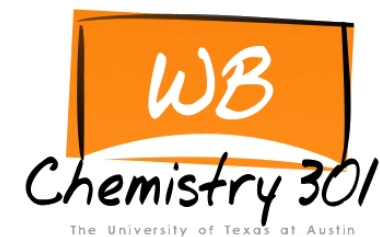
Core Concepts

- 4-6 minute “lessons”
 - No humans!
- Supplemental material
- Assess by concept
- Mastery before advancement

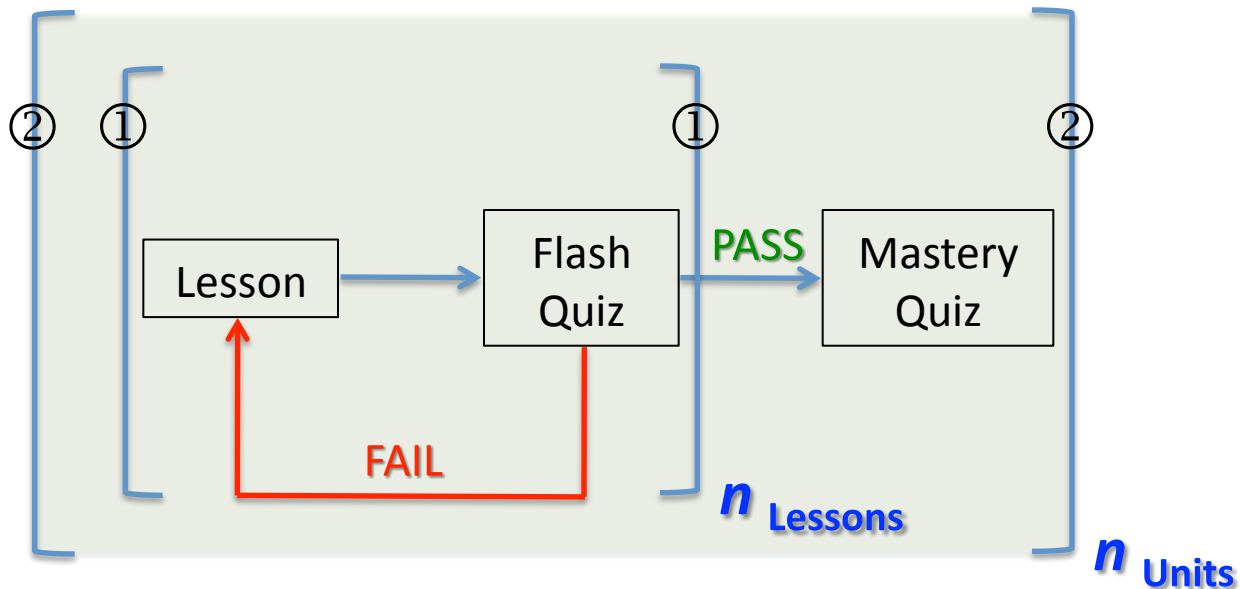
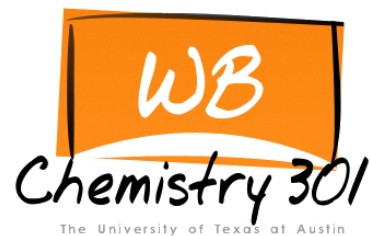
Flowchart for CH301WB



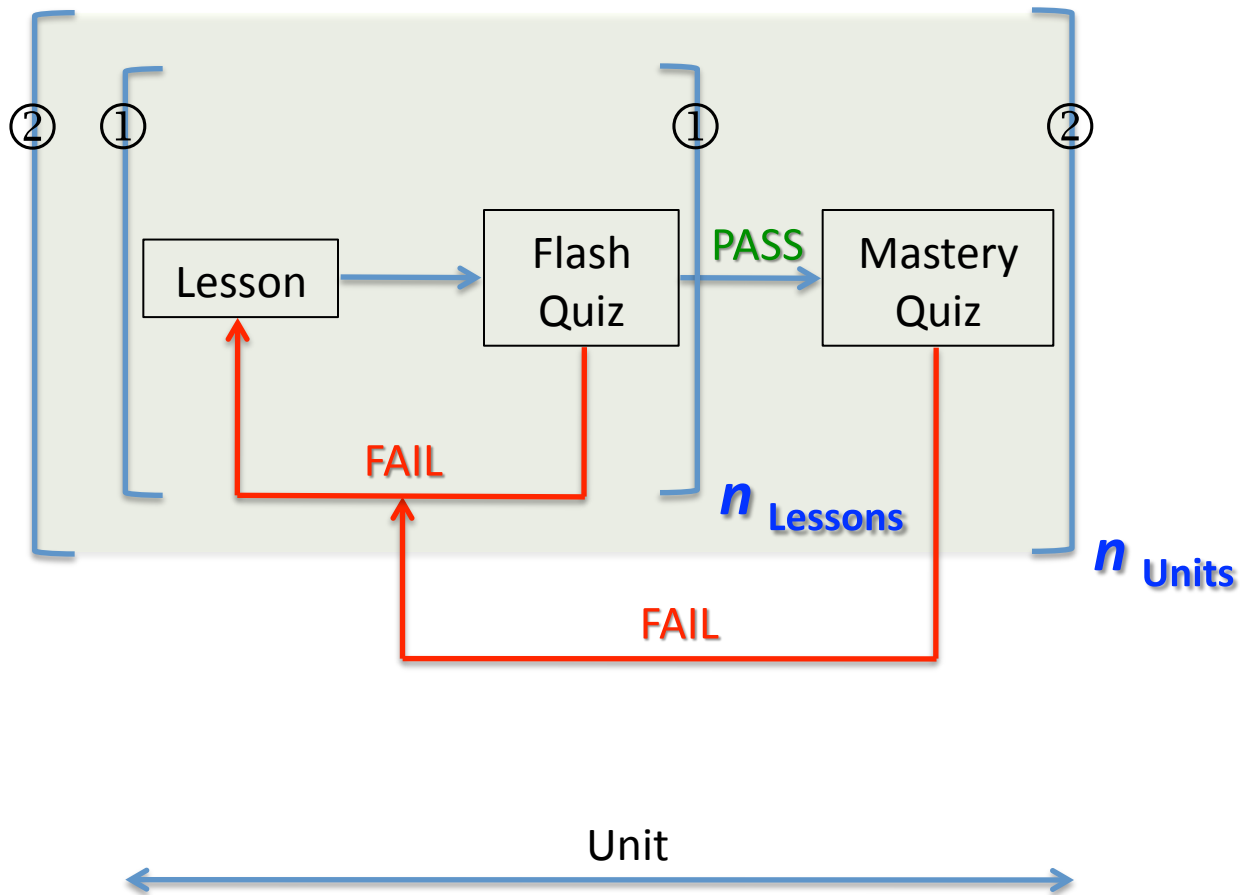
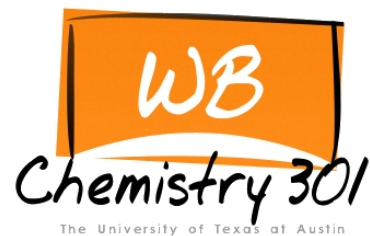
Flowchart for CH301WB



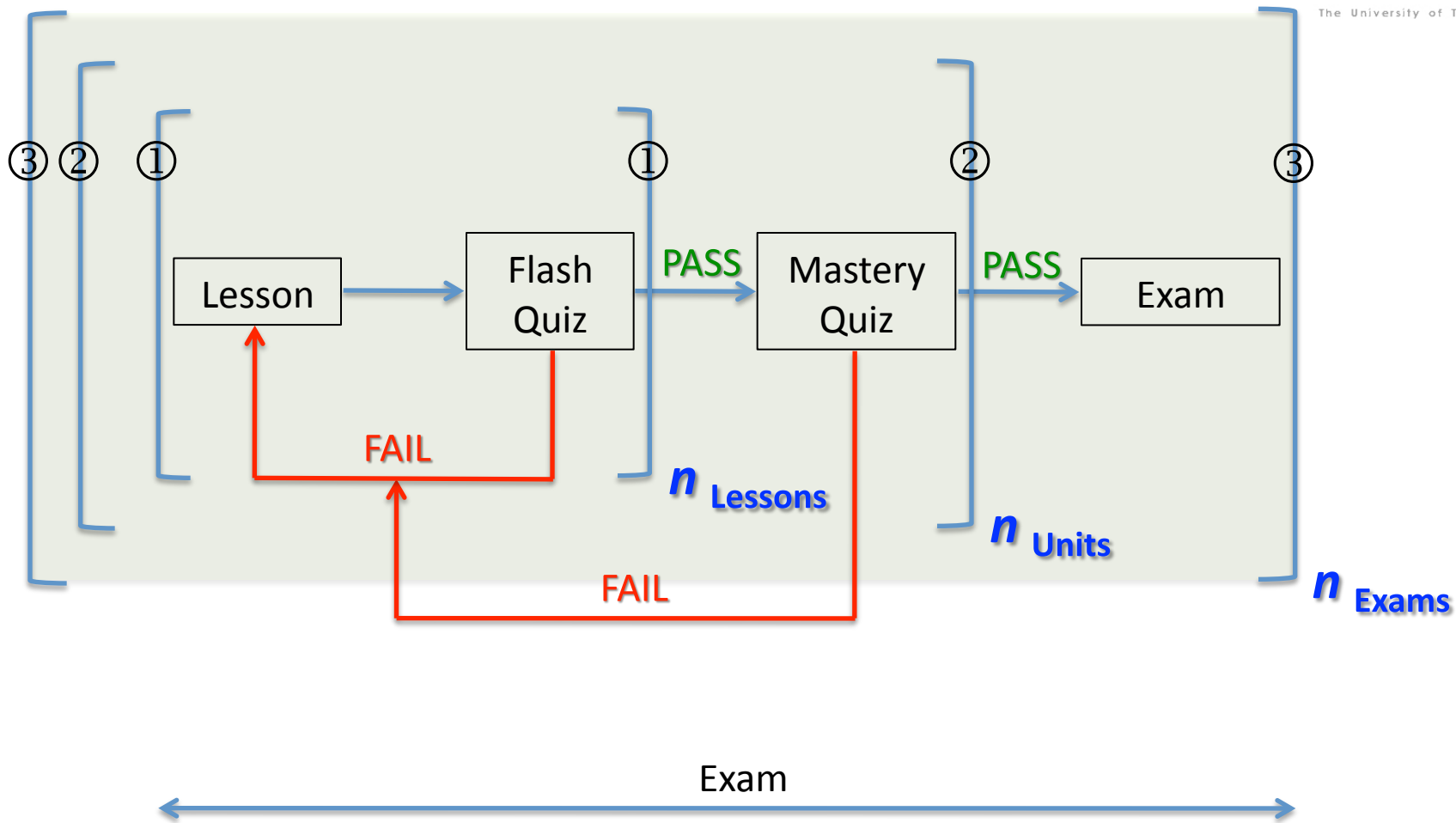
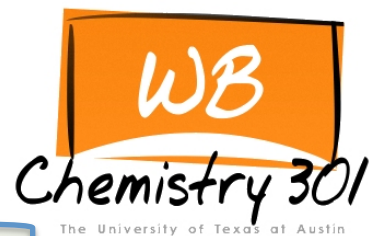
Flowchart for CH301WB



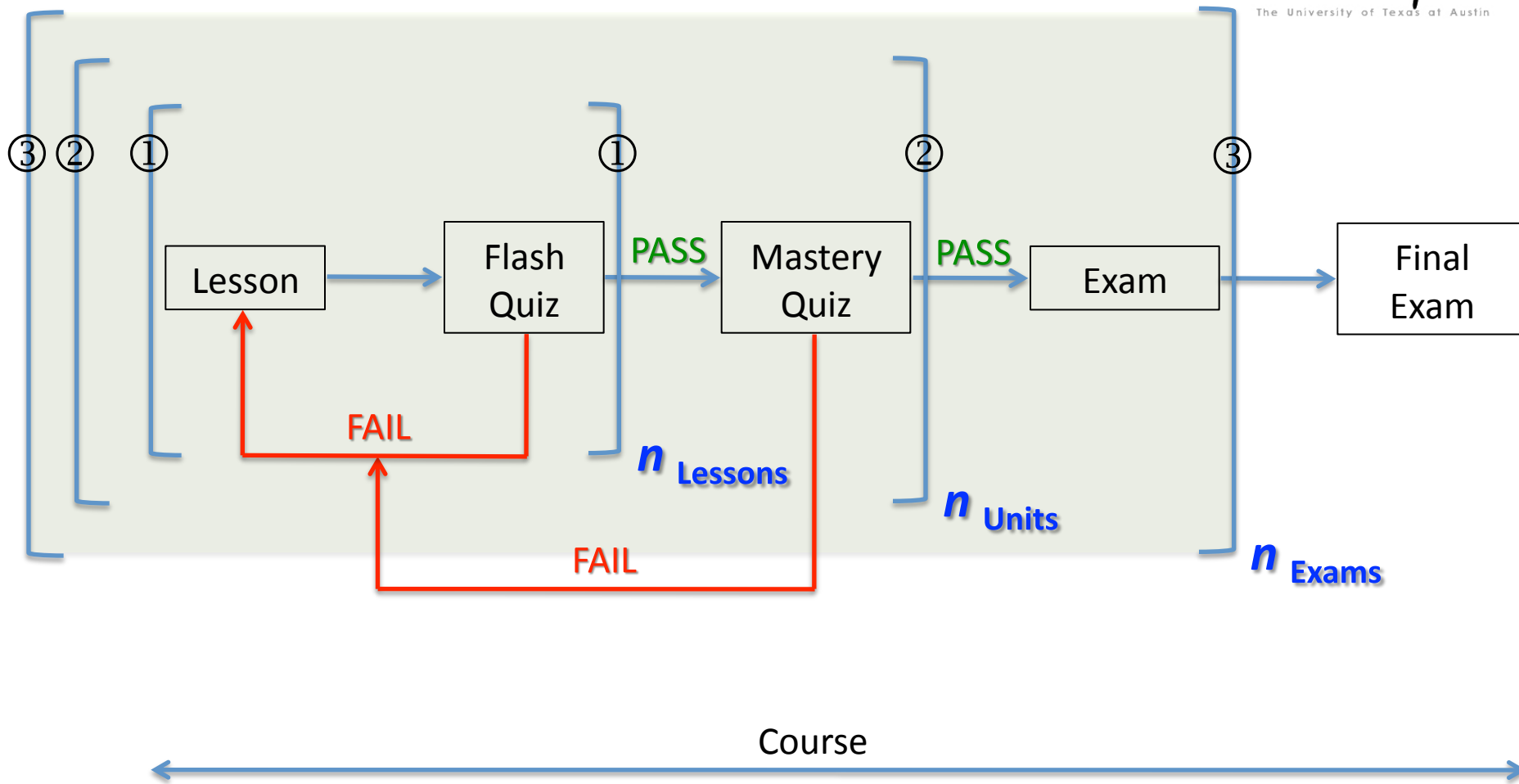
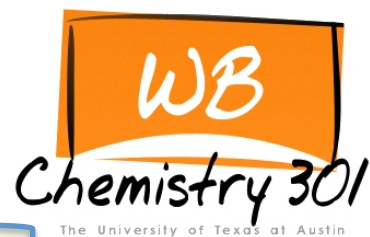
Flowchart for CH301WB



Flowchart for CH301WB



Flowchart for CH301WB





Chemistry 301

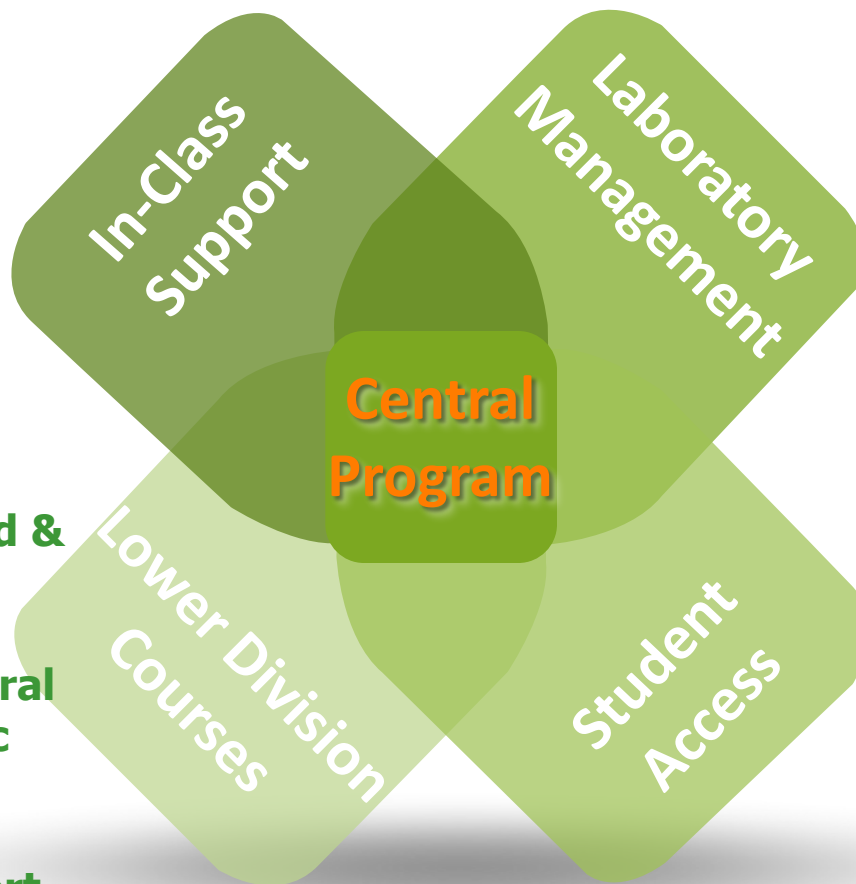
The University of Texas at Austin



Course Services System

- ✓ "How to" Videos
- ✓ Diagnostics
- ✓ Conceptual Analysis
- ✓ Learning Analytics
- ✓ Teaching Assistants
- ✓ pTA's

- ✓ CH301WB: a finished & tested component
- ✓ "Standard" large lecture-oriented general chemistry and organic chemistry courses
- ✓ Learning modules
- ✓ Hybrid course support



Programs:

- ✓ Lab Coordinator
- ✓ Lab Manager
- ✓ Stockroom Manager
- ✓ Teaching Assistants

- ✓ Pre-Lab Materials
- ✓ Experimental Data
- ✓ Post-Lab Materials
- ✓ Homework System (Delphi)
- ✓ "Levels the Playing Field"

WB

Course Services System

- ✓ "How to" Videos
- ✓ Diagnostics
- ✓ Conceptual Analysis
- ✓ Learning Analytics
- ✓ Teaching Assistants
- ✓ pTA's



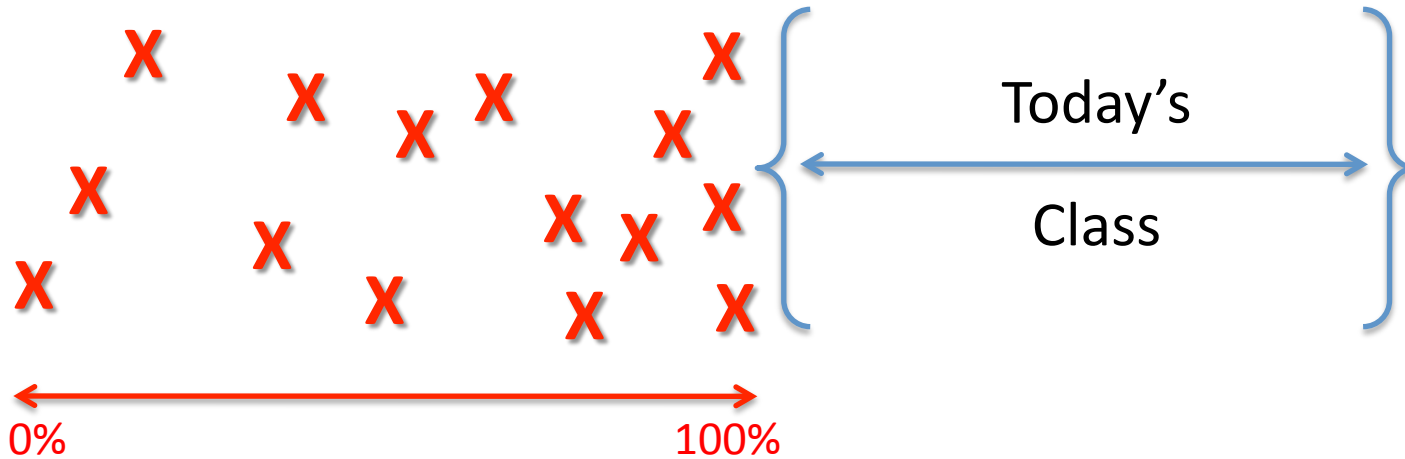


Specifics

- They aren't all the same...



Remember The Reality?



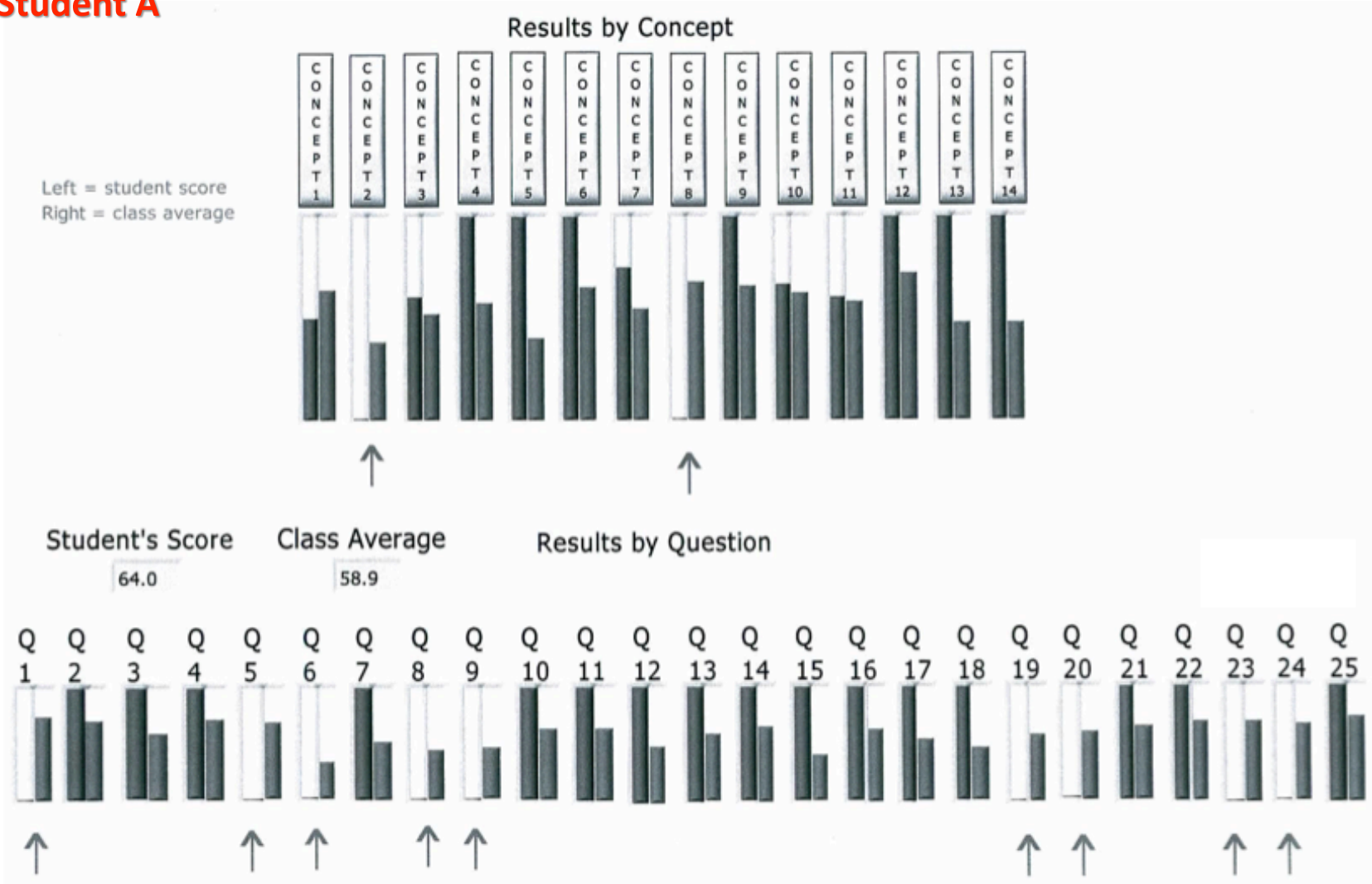
ACTUAL
Preparation Level



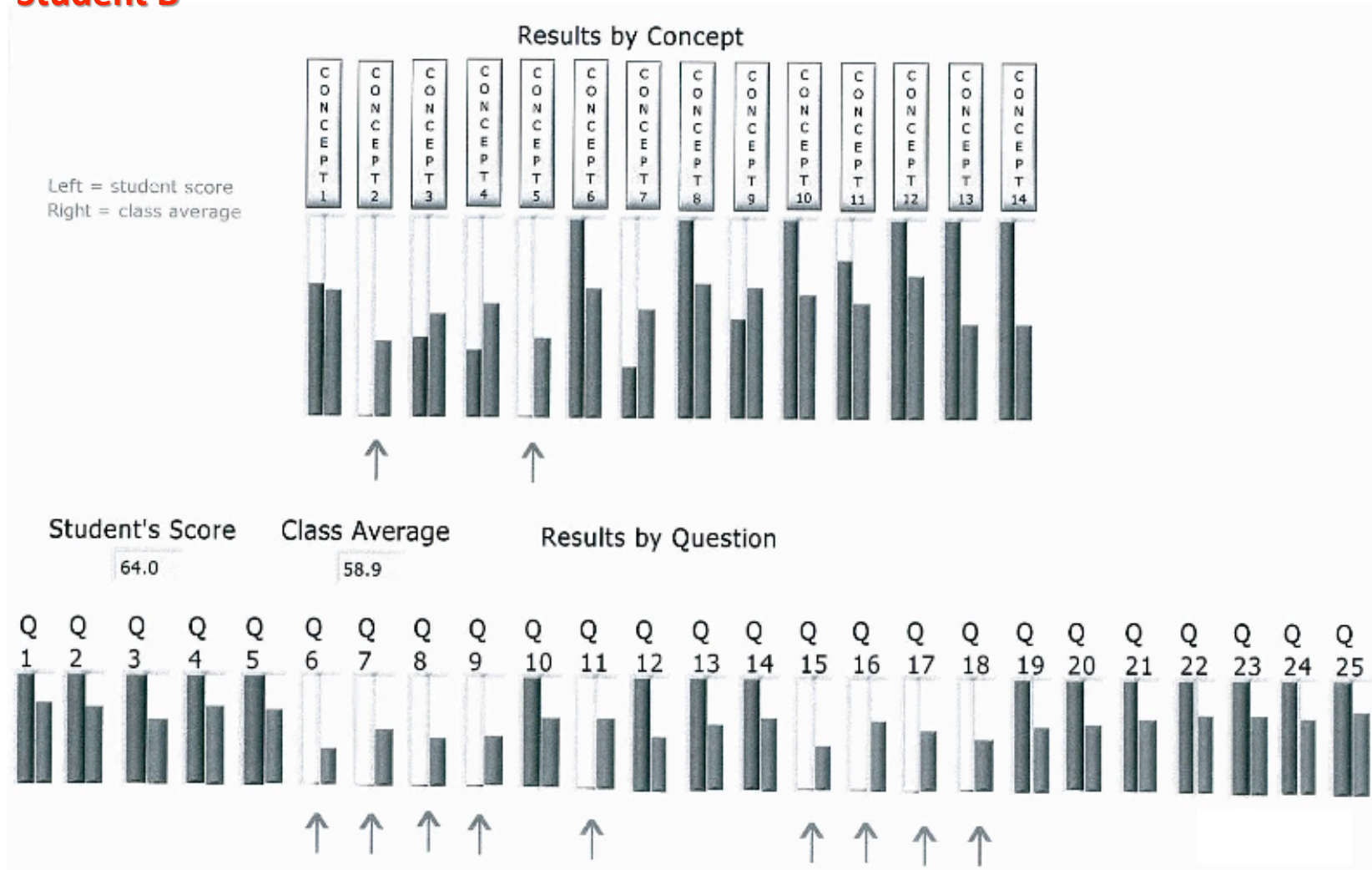
Specifics

- They aren't all the same...
- They aren't all equally prepared or at the same assessment state

Student A



Student B



Student A

Student B

Left = student score
Right = class average

Left = student score
Right = class average

Student's Score
64.0

Student's Score
64.0

Student A

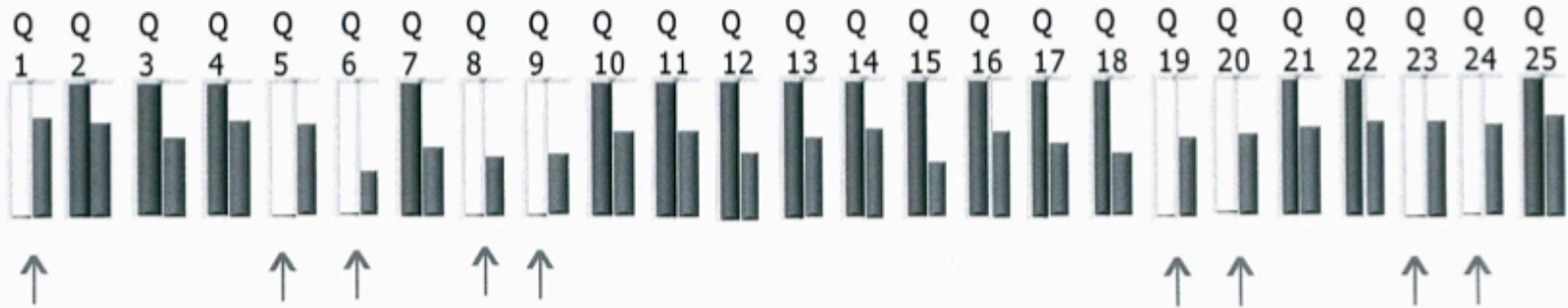
Student's Score

64.0

Class Average

58.9

Results by Question



Student B

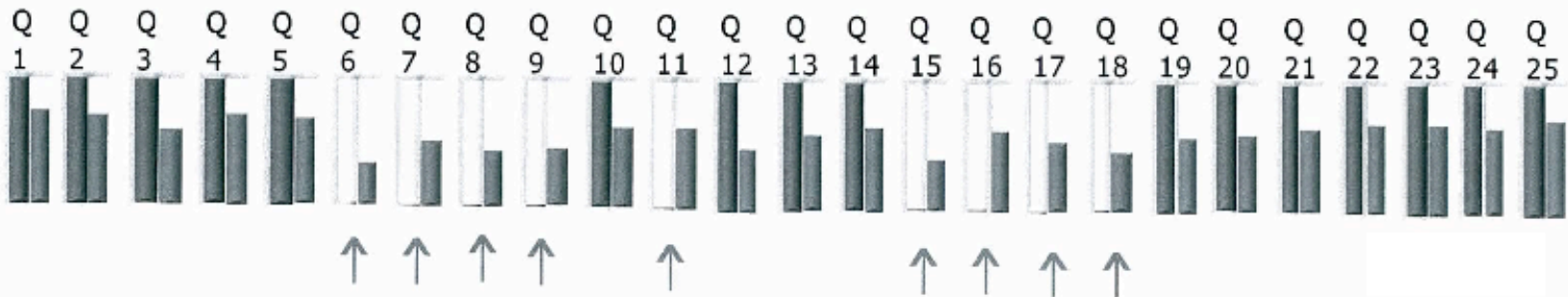
Student's Score

64.0

Class Average

58.9

Results by Question



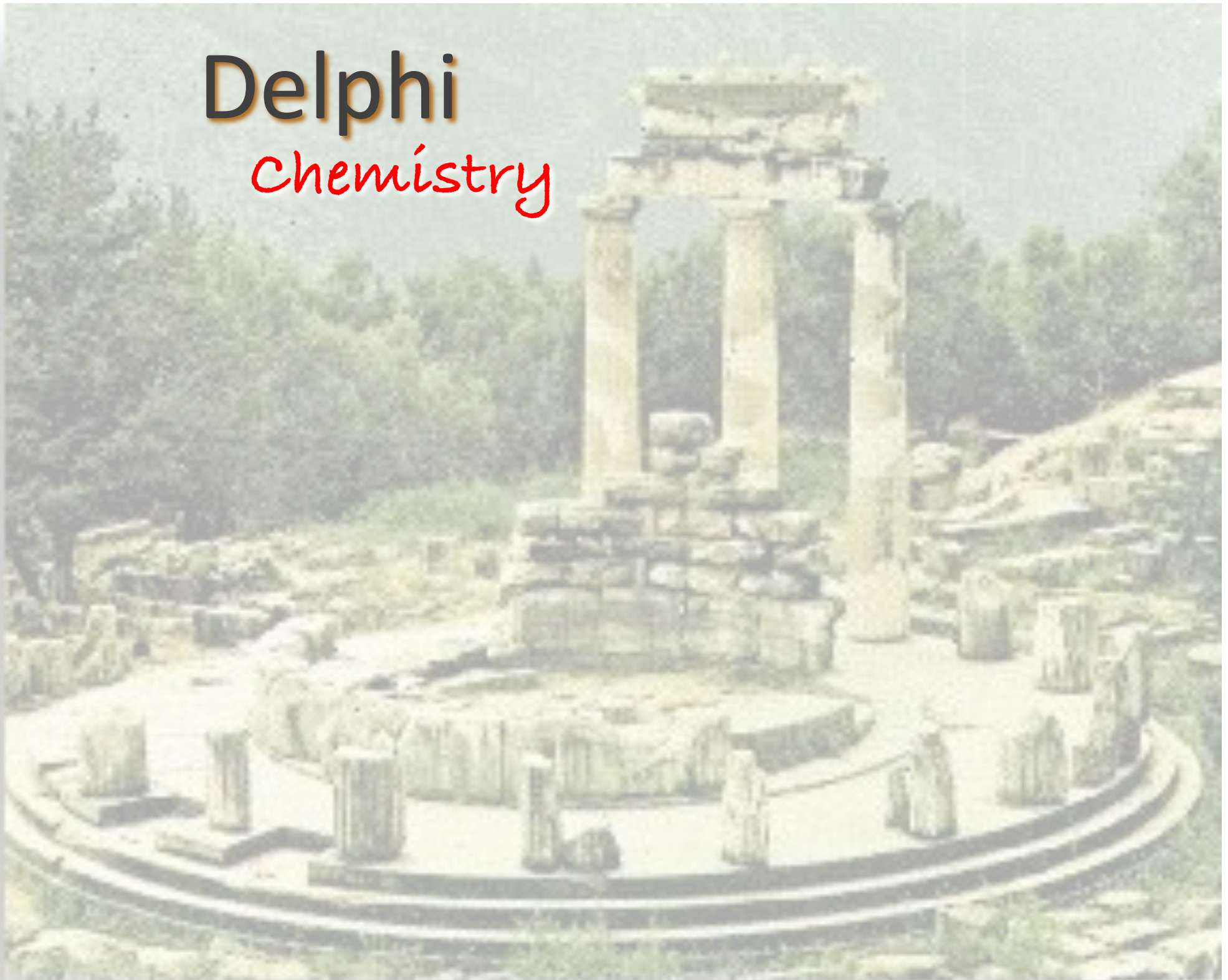


So, What's Next?

- Individually adaptive hybrid and online courses
- Common engine (CSS) that IS NOT content, but will deliver ANY content
- Delphi Assessment System

Delphi

Chemistry





So, What's Next?

- Individually adaptive hybrid and online courses
- Common engine (CSS) that IS NOT content, but will deliver ANY content
- Delphi Assessment System
 - 16 types of questions (thus far!)

Question Types

- 1 **Single Multiple Choice ✓**
- 2 **Multiple Multiple Choice ✓**
- 3 **Numeric ✓**
- 4 **Fill-in-the-blank ✓**
- 5 Clustered
- 6 Sequential Clustered
- 7 Contingent

✓ Available Now

Question Types

8 Free Text

9 Novella (Story)

10 Matching

11 “Drill and Kill”

12 Survey/Poll

13 Templated

14 “Choose Your Own
Adventure”

15 Crosswords

16 Acrostics



So, What's Next?

- The “Chemistry Corral”



So, What's Next?

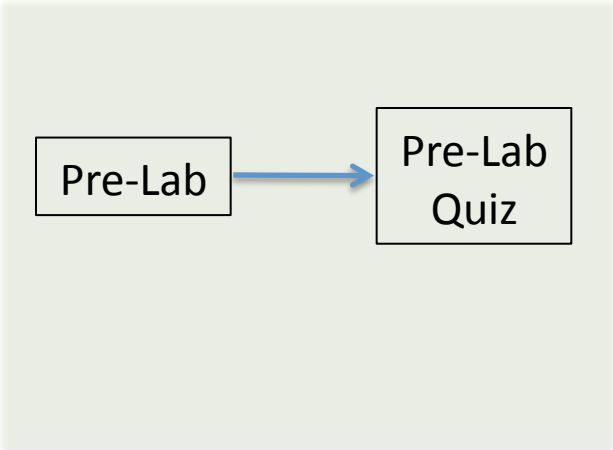
- The “Chemistry Corral”
- Say Goodbye to:
 - LMS, CMS
 - Textbooks
 - Homework Systems



Something to Think About...

- Example: Lab Variant

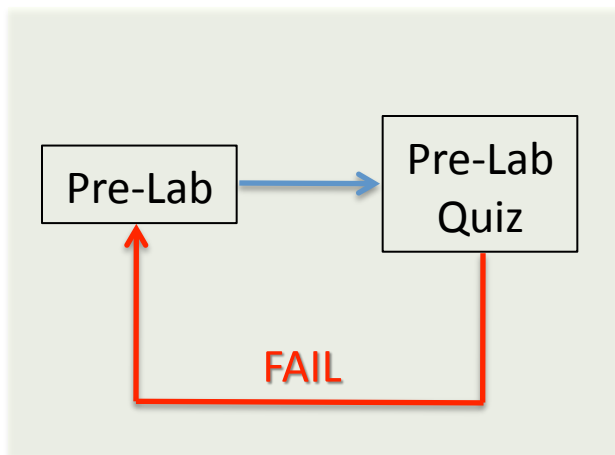
Flowchart for an Experiment



PRE-LAB
(Week leading up to Lab)



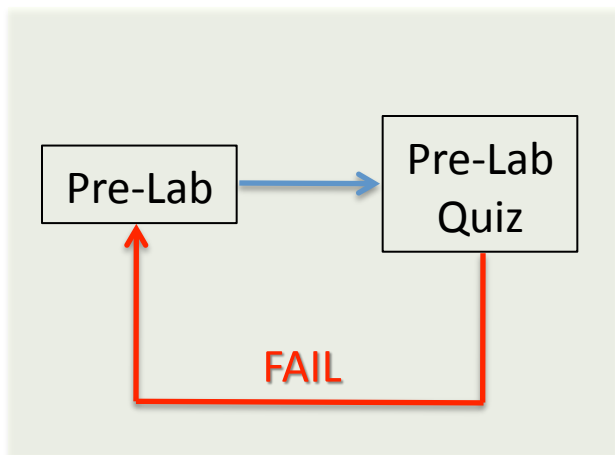
Flowchart for an Experiment



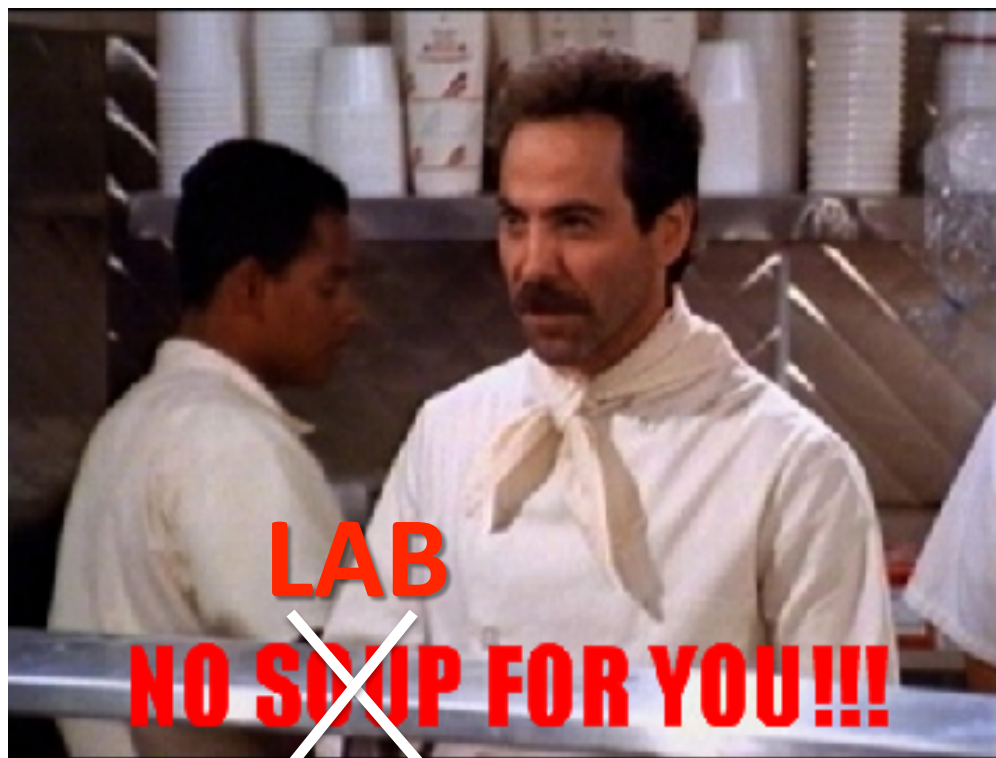
PRE-LAB
(Week leading up to Lab)



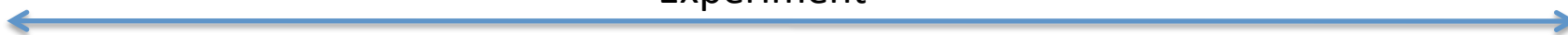
Flowchart for an Experiment



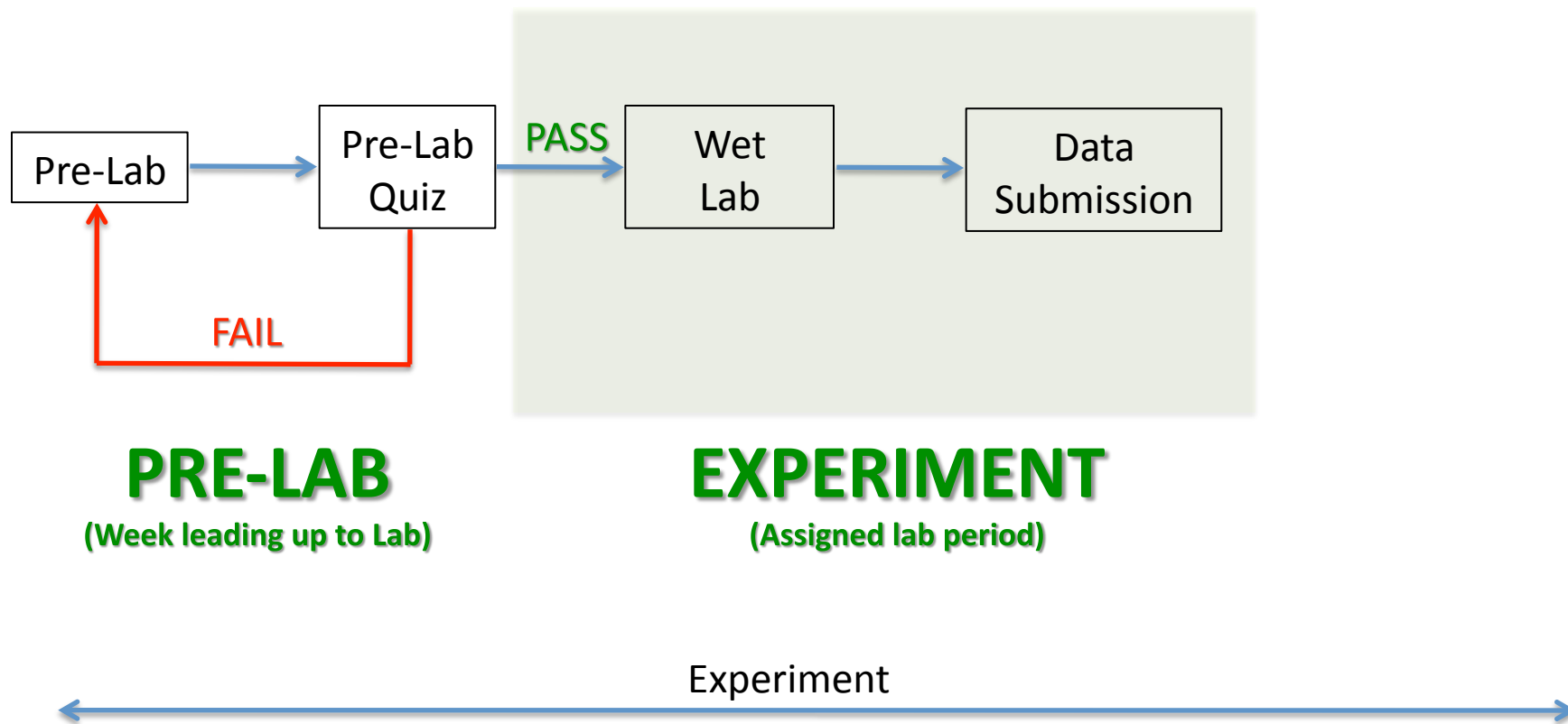
PRE-LAB
(Week leading up to Lab)



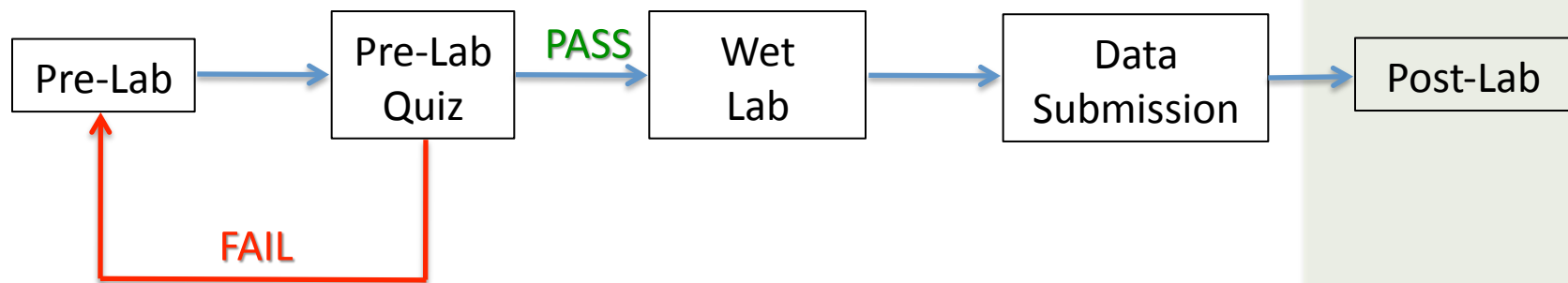
Experiment



Flowchart for an Experiment



Flowchart for an Experiment



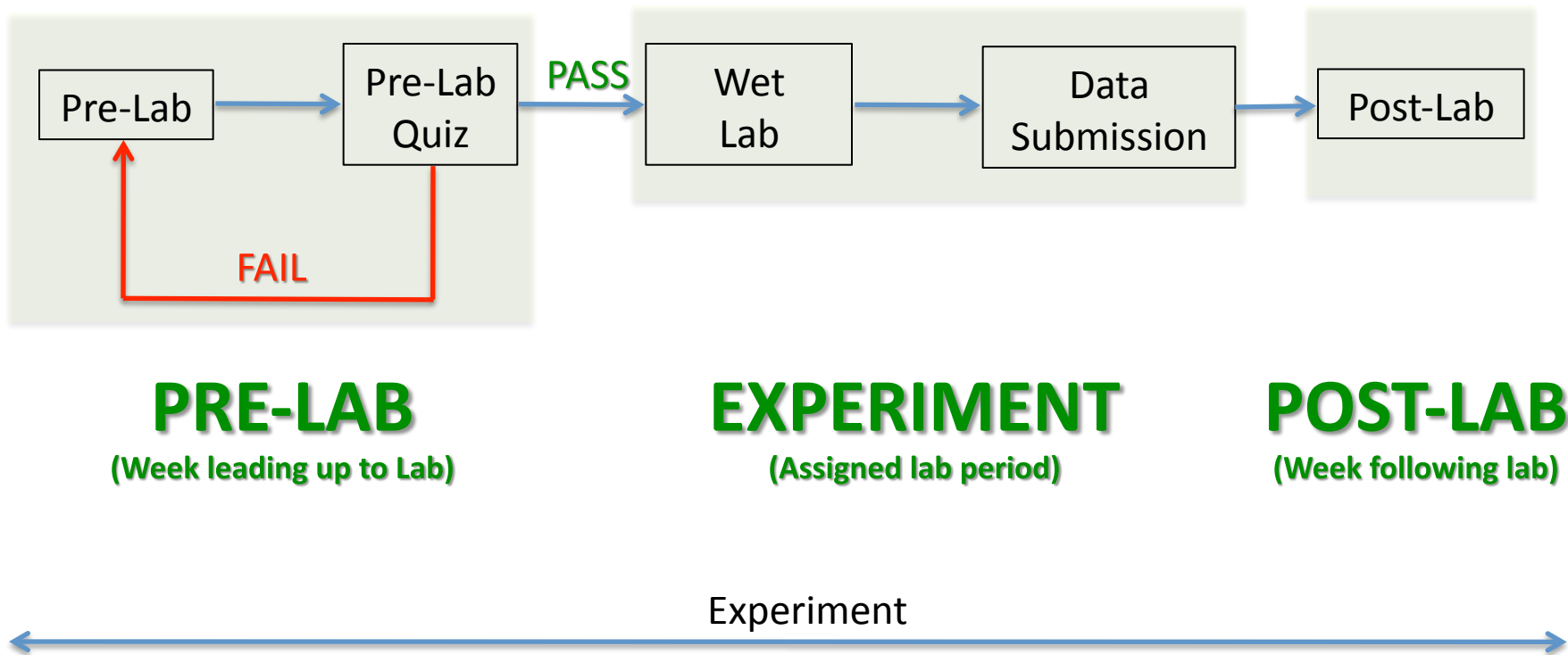
PRE-LAB
(Week leading up to Lab)

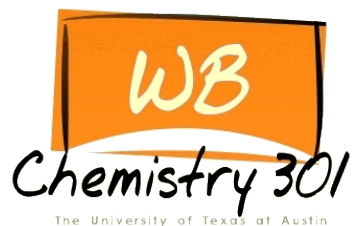
EXPERIMENT
(Assigned lab period)

POST-LAB
(Week following lab)



Figure 1:
Flowchart for an Experiment





For additional information and to join in on the conversation on how this will develop:

www.chem301wb.com



YE SHALL KNOW THE TRUTH AND THE TRUTH SHALL MAKE YOU FREE

