



Competency-Based Learning

Supporting Efforts in FCPS

Today's Facilitators

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COMPETENCY-BASED LEARNING

greatschoolspartnership.org/fcps



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Supporting Frederick County Public Schools

Introductory Webinar

Friday, February 3, 2017

10 am

Presenter

[Mark Kostin](#), Associate Director | Great Schools Partnership

[Webinar Slides](#)

[Webinar Recording](#)

Playlist

1. GSP's Ten Principles of Proficiency-Based Learning ([webpage](#) + [PDF](#))
2. New England Secondary School Consortium Leadership in Action Brief – How Does Proficiency-Based Learning Work? (A CSF resource) ([1-page overview](#) + [extended brief](#))

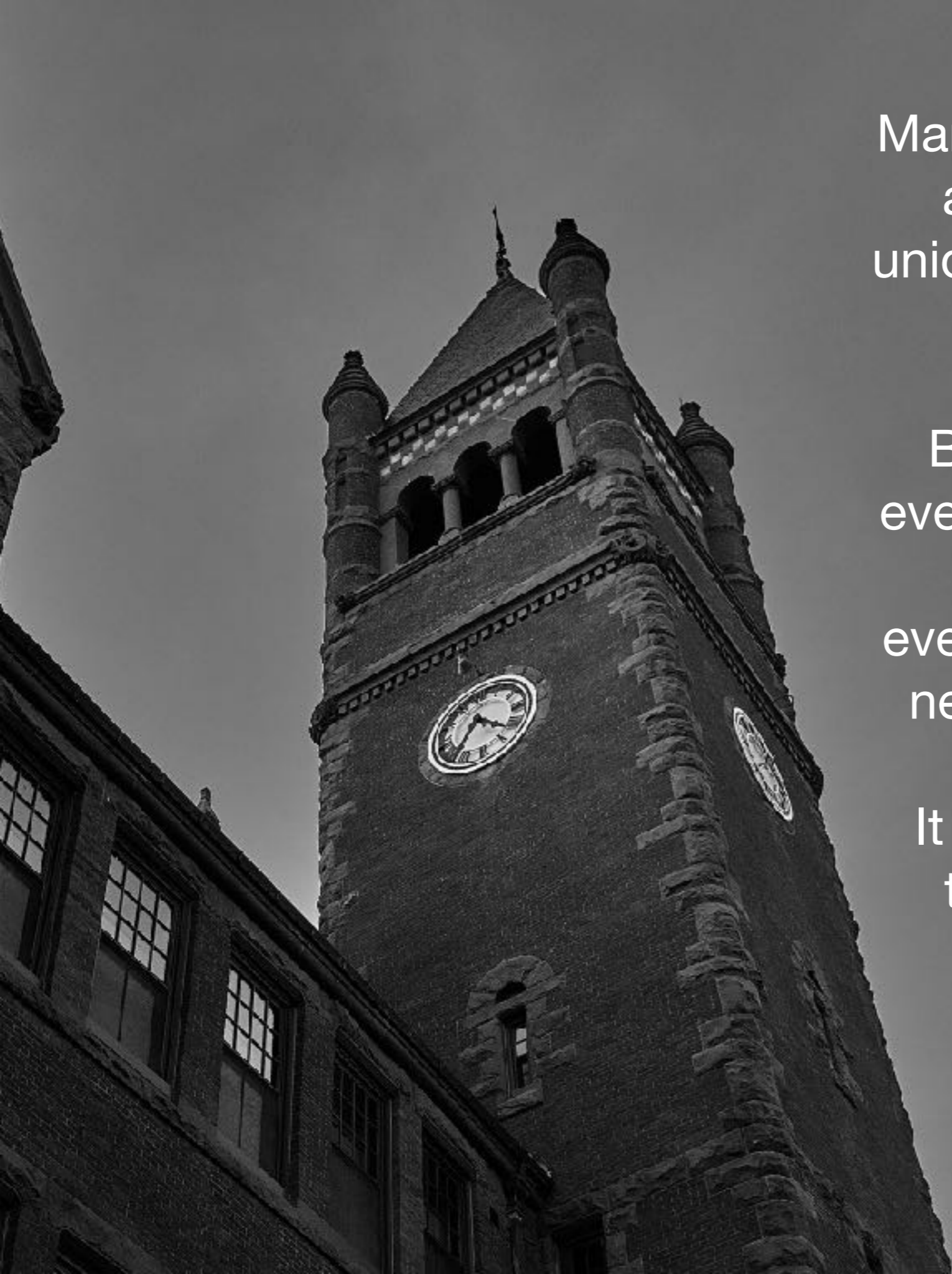
Outcomes

- Review and reflect on CBE survey results.
- Clarify some of the ways in which CBE looks different from traditional practices

The Story of the Three Masons







Many of us tend to think of vision
as a rarefied ability, something
unique to individuals of a creative
or intellectual bent.

....

But the fact is, all of us have it-
every time we imagine the future,
every time we feel hope,
every time we “dream things that
never were and ask “Why not?””

....

It has almost nothing to do with
the eyes, and everything to do
with the mind.

Burton M. Tansky

TECHNICAL VS ADAPTIVE

| Situation | Problem Definition | Solution | Responsible Person | Work | Data |
|---|--------------------|-------------------|--------------------|------------------------|--|
| Type I: Broken Bone | Clear | Clear | Expert | Technical | Expert takes x-ray of client |
| Type II: High Blood Pressure | Clear | Requires Learning | Expert and Client | Technical and Adaptive | Expert orders blood work; Client logs diet and exercise. |
| Type III: Migraine | Requires Learning | Requires Learning | Client | Adaptive | Client tracks behaviors that lead to symptoms using an app |

Survey

Competency-Based

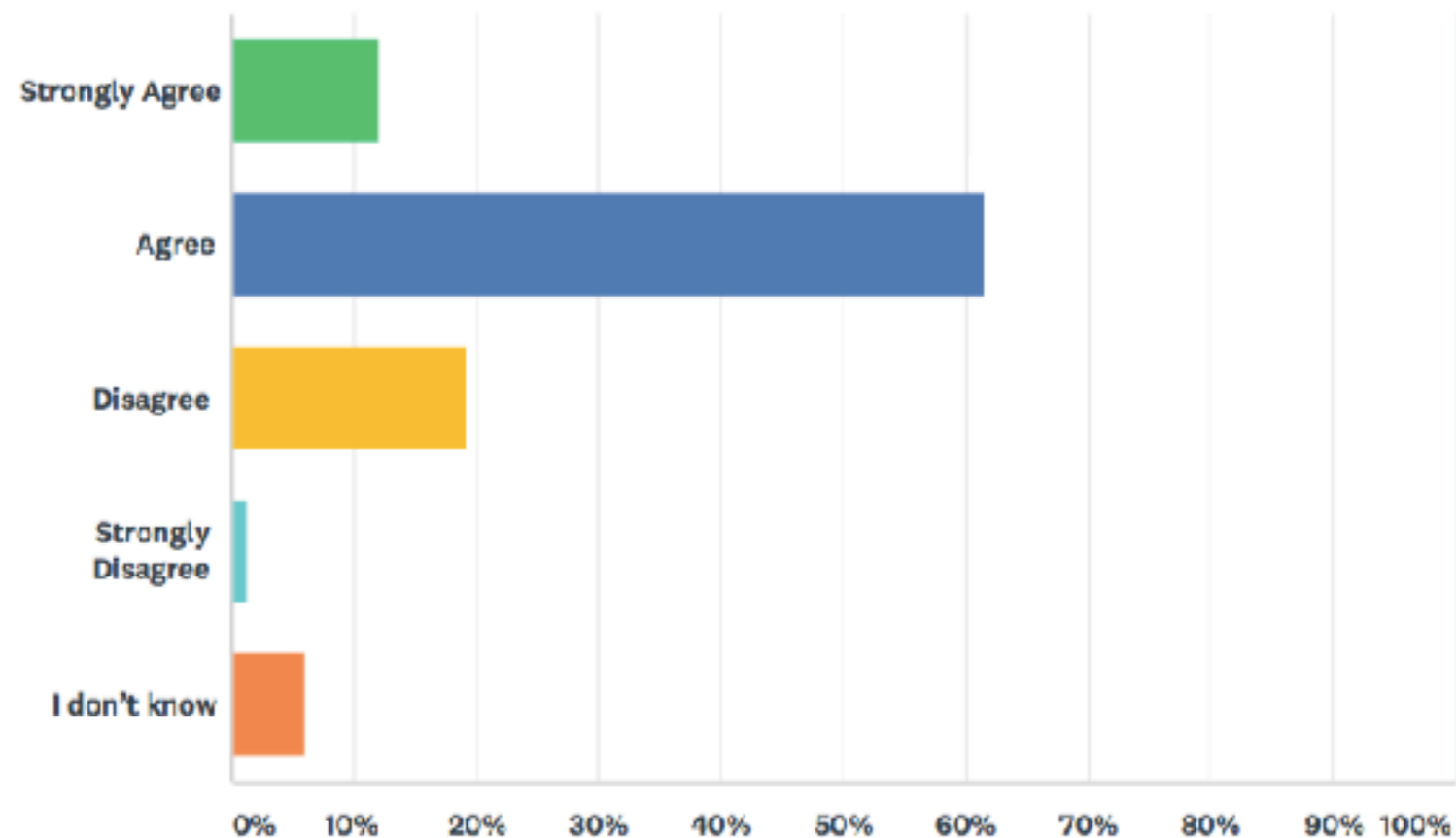
Results

Question 6

Assessments are standards-based and criterion referenced

Q6 All forms of assessment are standards-based and criterion-referenced, and success is defined by the achievement of expected standards, not relative measures of performance or student-to-student comparisons.

Answered: 83 Skipped: 2



Theorem 6.7.6 For $0 \leq k \leq n$, $C(n+1, k) = C(n, k-1) + C(n, k)$.

Proof Let X be a set with n elements. Choose $a \in X$. Then $C(n, k)$ is the number of k -element subsets of $Y = X \cup \{a\}$. Now the k -element subsets of Y can be divided into two disjoint classes:

1. Subsets of Y not containing a .
2. Subsets of Y containing a .

The subsets of class 1 are just k -element subsets of X and there are $C(n, k)$ of these. Each subset of class 2 consists of a $(k-1)$ -element subset of X together with a and there are $C(n, k-1)$ of these. Therefore,

$$C(n+1, k) = C(n, k-1) + C(n, k).$$

Theorem 6.7.6 can also be proved using Theorem 6.2.17 (Exercise 17 of this section). We conclude by showing how the Binomial Theorem (Theorem 6.7.1) and Theorem 6.7.6 can be used to derive other combinatorial identities.

Example 6.7.7

Use the Binomial Theorem to derive the equation

$$\sum_{k=0}^n C(n, k) = 2^n. \tag{6.7.3}$$

The sum is the same as the sum in the Binomial Theorem,

$$\sum_{k=0}^n C(n, k) a^{n-k} b^k,$$

except that the expression $a^{n-k} b^k$ is missing. One way to "eliminate" this expression is to take $a = b = 1$, in which case the Binomial Theorem becomes

$$2^n = (1 + 1)^n = \sum_{k=0}^n C(n, k) 1^{n-k} 1^k = \sum_{k=0}^n C(n, k).$$

Equation (6.7.3) can also be proved by giving a combinatorial argument. Given an n -element set X , $C(n, k)$ counts the number of k -element subsets. Thus the right side of equation (6.7.3) counts the number of subsets of X . But the number of subsets of X is 2^n ; we have reproved equation (6.7.3).

Example 6.7.8

Use Theorem 6.7.6 to show that

$$\sum_{k=0}^n C(n, k) = C(n+1, k+1).$$

We use Theorem 6.7.6 in the form

Criterion-Based Assessment

Foliage Inquiry: Proficiency Scales

Learning Expectation 05: Integrative Thinking
Middle Level Grades 5-8

| Integrative Thinking | Beginning | Emerging | Proficient | Advanced |
|---|--|--|---|--|
| MS.05.07 Make hypotheses based on observations. | I can identify the variables in the situation. | I can identify and explain an inferred relationship between variables. | I can develop a hypothesis that specifically predicts the relationship between variables based on theories and / or observations. | I can justify my hypothesis using reliable evidence. OR I can justify a revision to my hypothesis using reliable evidence. |

Learning Target and/or Content of this task:

I can use evidence to make and revise a prediction / hypothesis for my foliage inquiry. My hypothesis will guide which questions to investigate and which evidence is applicable to solving the problem.

Specific Requirements of this task:

- Write a prediction / hypothesis using if, then, because format, identifying variables and clearly showing cause and effect.
- Use information from readings in class as well as class experimental data, as evidence to

To demonstrate proficiency for this task:

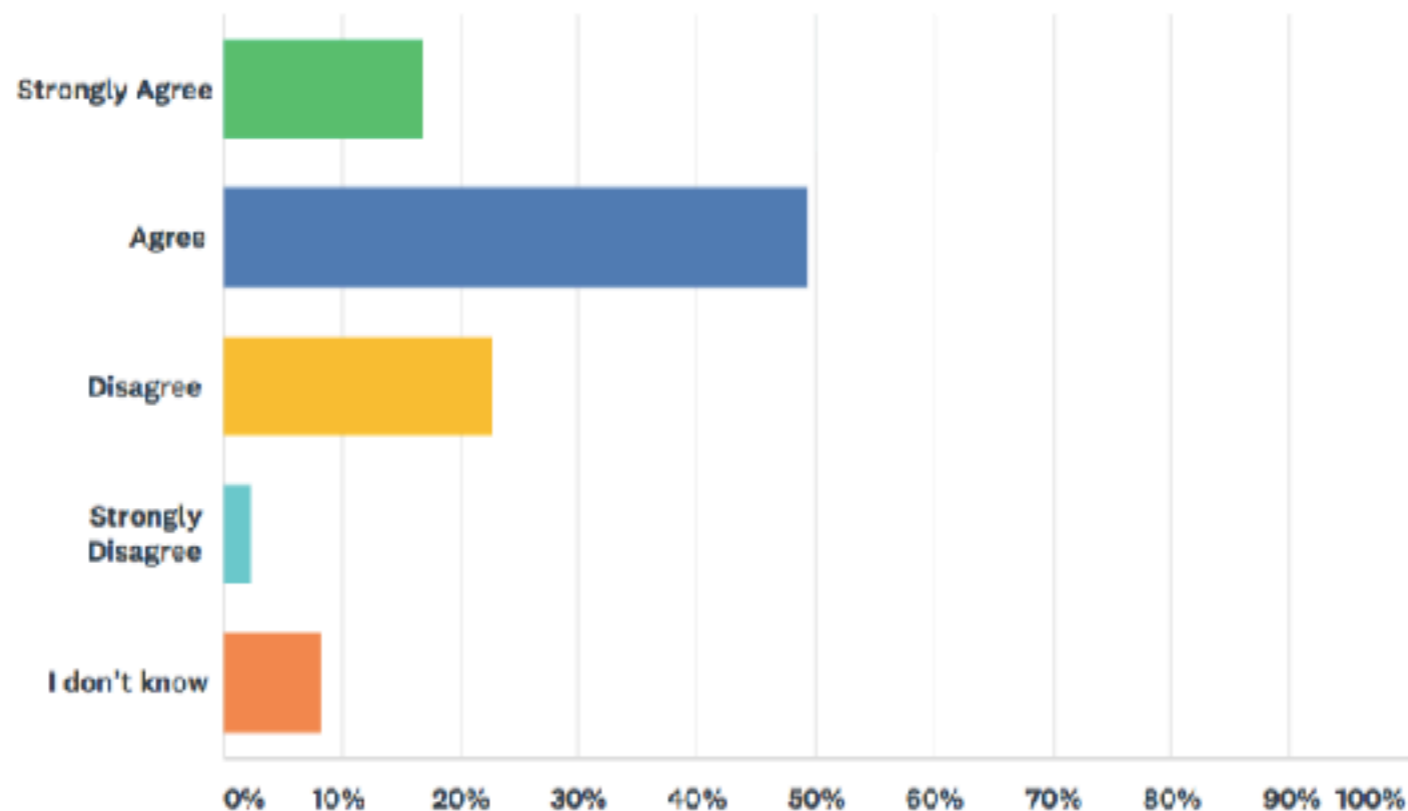
- Write a prediction / hypothesis that describes how the manipulated variable will affect the responding variable using evidence gathered in class.
- Write a prediction / hypothesis that describes why the manipulated variable will affect the responding variable using evidence gathered in class.

Question 9

Academic progress and achievement are monitored and reported separately from work habits

Q9 Academic progress and achievement are monitored and reported separately from work habits, character traits, and behaviors such as attendance and class participation, which are also monitored and reported.

Answered: 83 Skipped: 2



Habits of Work

| Task | Fall | Winter |
|--|-------|--------|
| CB Trimester 1 | 3.5 | |
| CB Trimester 2 | | 3.75H |
| HOW | 4.0 | 3.75 |
| CB Trimester 1 | 3.75H | |
| CB Trimester 2 | | 4.0H |
| HOW | 4.0 | 4.0 |
| CB Trimester 1 | 3.5 | |
| CB Trimester 2 | | 3.5 |
| HOW | 4.0 | 4.0 |
| CB Trimester 1 | 3.75H | |
| CB Trimester 2 | | 4.0H |
| HOW | 3.75 | 3.25 |
| CB Trimester 1 | P | |
| CB Trimester 2 | | INC |
| <i>Term 2 Comments: When Tamara completes her internship, she will be able to earn Winter Trimester Crew Credit.</i> | | |
| HOW | 3.5 | 3.25 |
| CB Trimester 2 | | 3.5 |
| HOW | | 3.0 |
| CB Trimester 1 | P | |
| HOW | 3.0 | |

Habits of Work

CBHS Universal Habits of Work (HOW) Traits

The list below describes the Habits of Work traits that CBHS faculty teach and assess; it includes “the Big 3” described above and is organized around elements of the “Pathways to Success.” Teachers may provide additional criteria to define what a particular HOW trait looks like in their course or discipline.

Work Ethically

*Behave ethically and treat others with respect.
Accept responsibility for personal decisions and actions.*

Work Collaboratively

*Work actively and cooperatively to achieve group goals.
Perform a variety of roles within a group.
Fulfill individual responsibilities within the group.*

Be Accountable

*Complete homework; prepare for class.
Use class time effectively.
Meet deadlines and established criteria.*

Persevere

*Persevere when things are hard.
Complete revisions when necessary.
Access appropriate resources to solve problems.*

Be Community

*Participate effectively and positively in class.
Make sure class members feel safe and comfortable.
Demonstrate stewardship.*

Pursue Personal Best

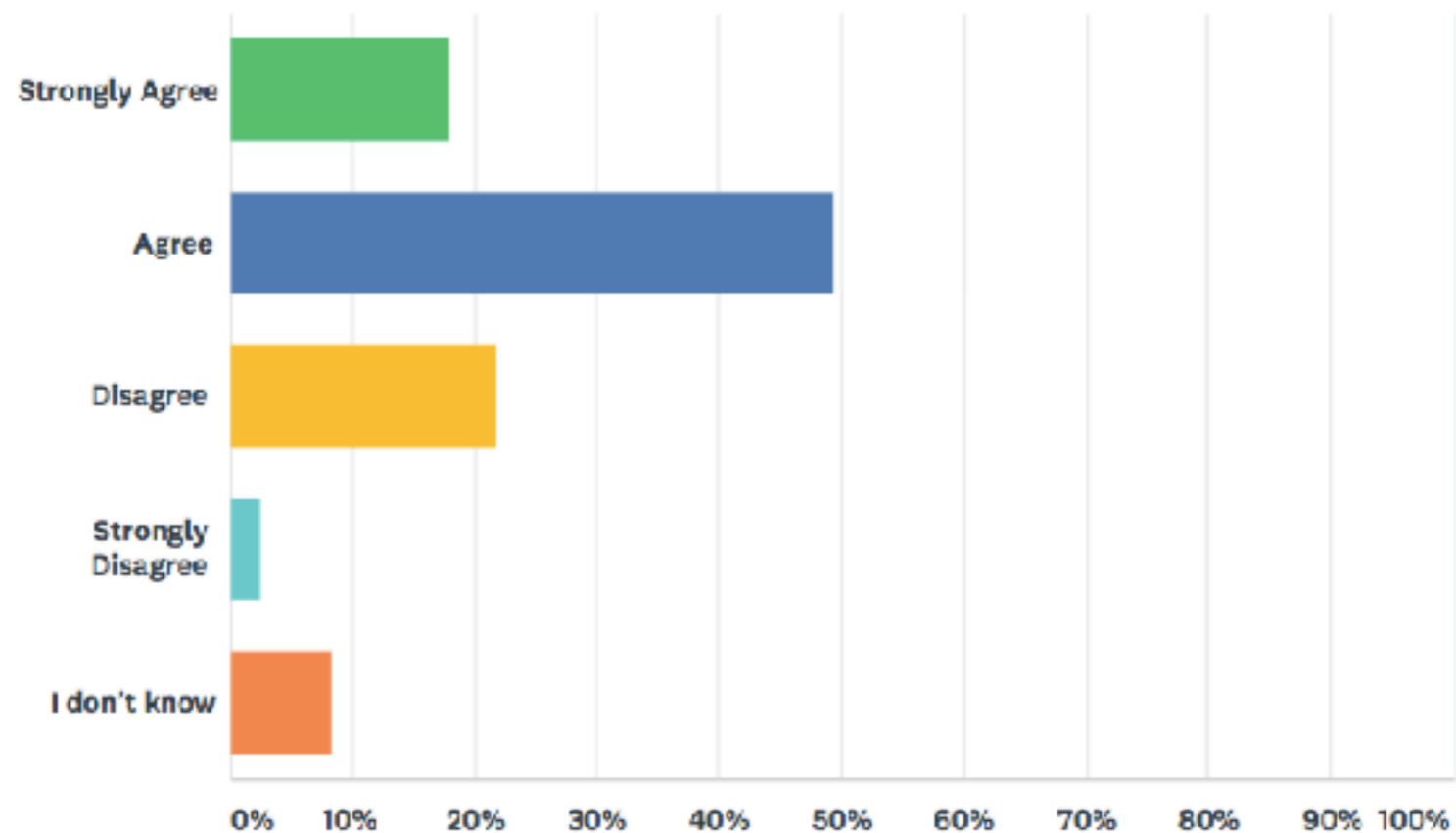
*Be willing to try new things; take constructive risks.
Seek from setbacks and feedback.
Seek challenge and solutions.*

Question 11

Students are given multiple opportunities to improve their work

Q11 Students are given multiple opportunities to improve their work when they fail to meet expected standards.

Answered: 83 Skipped: 2



Redos and Retakes

Eligibility for Re-Testing:

Students are eligible for re-testing if they meet the following criteria:

- The student schedules the Re-Test within 4 school days after tests are returned. Re-Tests must be taken before or after school and cannot be completed during regular class time.
- The student completes all required remediation set by the teacher (may include specified amount of tutorials, additional assignment, or corrections)

Note: If a student misses the scheduled time for the re-test without a valid excuse, the opportunity for re-testing may be forfeited.

Re-Testing Guidelines:

- The maximum grade recorded for a re-test will be 75; if the Re-Test score is lower than the original score, the original score will remain.
- Students may only re-take a test once.
- The Re-Test may be different from the original test, but will cover the same material.
- If a student fails a test due to cheating, the student loses the opportunity to re-take the exam.

Redos and Retakes

“LSAT. MCAT. Praxis. SAT. Bar exam. CPA exam. Driver's licensure. Pilot's licensure. Auto mechanic certification exam. Every one of these assessments reflects the adult-level, working-world responsibilities our students will one day face. Many of them are high stakes: People's lives depend on these tests' validity as accurate measures of individual competence. All of them can be redone over and over *for full credit*. Lawyers who finally pass the bar exam on their second or third attempt are not limited to practicing law only on Tuesdays or only under the watchful eye of a seasoned partner for the duration of their careers.”

- Rick Wormelli

HASH TAG & HELP

- **Think of one hashtag** to express how you feel about today's session.
- **Write your hashtag** on the **lined side** of the notecard along with your **quick evaluation** of this session using one number (4= advanced; 3=proficient; 2=emerging; 1=beginning).
- **Think of what and where you need help** as you implement proficiency-based learning.
- **Write your help requests** on the **blank side** of the notecard.
- **Place your notecard** in the basket as you exit the room.





THANK YOU

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