Open Space

Which **one** topic would you be interested in discussing for the next 45 minutes?

• Teacher Engagement?
• Unexpected Hurdles?
• School Board Support?
• Others?
Series Outcomes

• Build capacity to implement mastery-based learning at scale across a school district

• Explore and share ideas and strategies underway or planned in alignment with implementation

• Create a network of like-minded educators for political and cultural support
Meeting Dates

All Meetings to be held at Connecticut Association of Schools

- October 13, 2017
- December 16, 2016
- **February 8, 2017**
- April 28, 2017
- June 21, 2016

NESSC School Redesign in Action Conference: March 27 and 28 in **Hartford**
Agenda

Update on Your Conversations Since We Last Met

What are Transferrable Skills?

Sample Measurement System from VT

Implications for Our Work

Preparing for April
Group Norms

- Build on and support one another’s efforts
- Acknowledge and encourage different approaches as we collaborate
- Trust the integrity of our colleagues
- Monitor our air time in group gatherings
- Communicate openly, clearly, and directly
- Acknowledge and honor different perspectives
- Assume positive intentions of all members
- Honor confidentiality regarding the conversations held here
Since We Last Met?

What steps have you take or hurdles have you faced regarding aggregation of student scores?
Aggregation of Performance Indicator Scores

• Power Law
• Decaying Average
• Most Recent Score
Aggregation of Graduation Competencies

Body of Evidence

v

Mathematical Formulas
Mastery-Based Learning Simplified

Cross-Curricular Graduation Competencies define a set of significant learning concepts that are not within the domain of a single content area, but are embedded in multiple areas. These are drawn from the Mathematical Practices of the Common Core, the Characteristics of Students Who are College and Career Ready from the ELA Common Core, and associated Connecticut state standards.

Content-Area Graduation Competencies define a set of significant learning concepts in each content area. These are drawn from the Math Common Core and English/Language Arts Common Core and associated Connecticut state standards.

<table>
<thead>
<tr>
<th>Required for Graduation</th>
<th>Reporting Method</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>Transcript and Report Cards</td>
<td>Cross-Curricular Graduation Competencies 5-8 school-wide competencies</td>
</tr>
<tr>
<td>YES</td>
<td>Transcript and Report Cards</td>
<td>Content-Area Cluster Competencies 5-8 competencies per content area</td>
</tr>
<tr>
<td>NO</td>
<td>Progress Reports</td>
<td>Performance Indicators 5-10 indicators per content-area competency</td>
</tr>
<tr>
<td>NO</td>
<td>Feedback to Student</td>
<td>Unit-Based Learning Objectives Guided by essential questions, teachers use daily learning targets to create progressions that move students toward the demonstration of performance indicators</td>
</tr>
</tbody>
</table>

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Preparation for February

- Keep a brief “log”
- Note examples when students demonstrate transferable skills, the situation in which this happens, and if it is teacher or student designed
- Come to February prepared to share
Transferable Skills

- Who wasn’t here?
- Form triads across districts
- Share your examples
- What skill or skills was the student showing?
- Where did this “demonstration” occur?
- Who designed the experience?
Examples of Transferable Skills

- Clear and Effective Communications
- Self-Direction
- Creative and Practical Problem Solving
- Responsible and Involved Citizenship
- Informed and Integrative Thinking
Habits of Work: What are These?
Examples of Habits of Work

- Work Ethically
- Work Collaboratively
- Be Accountable
- Persevere
- Be Community
- Pursue Personal Best
Group Work

- What are the overlaps between these two concepts?
- What problems might one or the other of these resolve?
- What implementation problems can you envision?
- What are systemic solutions worth exploring?
What about:

- Reliability?
- Validity?
- Practicality?
We believe that reliability results from the careful alignment of demonstration tasks and instruction with intended learning outcomes. Comparability is possible when teachers assess student work with task-neutral common scoring guides and have time to calibrate their understanding and use. The graphic below represents five general learning pathways and how they can be assessed. While each of these has instructional value, only the first four will lead to greater comparability over time because they are assessed using common scoring criteria. We believe that these pathways are valuable and represent the many ways educators are personalizing learning for students in a proficiency-based learning system.
Vermont Transferable Skills Assessment System

**Transferable Skills**

- TS 1: Clear + Effective Communication
- TS 2: Self-Direction
- TS 3: Creative + Practical Problem Solving
- TS 4: Responsible + Involved Citizenship
- TS 5: Informed + Integrative Thinking

**Performance Indicators**

a. Demonstrate organized and purposeful communication.
b. Use evidence and logic appropriately in communication.
c. Integrate information gathered from active speaking and listening.
d. Adjust communication based on the audience, context, and purpose.
e. Demonstrate effective, expressive, and receptive communication, including oral, written, multi-media, and performance.
f. Use technology to further enhance and disseminate communication.
g. Collaborate effectively and respectfully.
TS 1: Clear + Effective Communication

- a. Demonstrate organized and purposeful communication.
- b. Use evidence and logic appropriately in communication.
- c. Integrate information gathered from active speaking and listening.
- d. Adjust communication based on the audience, context, and purpose.
- e. Demonstrate effective, expressive, and receptive communication, including oral, written, multimedia, and performance.
- f. Use technology to further enhance and disseminate communication.
- g. Collaborate effectively and respectfully.

TS 2: Self-Direction

TS 3: Creative + Practical Problem

TS 4: Responsible + Involved Citizenship

TS 5: Informed + Integrative Thinking
Vermont Transferable Skills Assessment System

- **TS 1**: Clear + Effective Communication
  - Moderated Task - TS 1
    - Student Work
  - Student Work

- **TS 2**: Self-Direction
  - Student Work

- **TS 3**: Creative + Practical Problem
  - Moderated Task - TS 3
    - Student Work
  - Student Work

- **TS 4**: Responsible + Involved Citizenship
  - Student Work

- **TS 5**: Informed + Integrative Thinking
  - Moderated Task - TS 5
    - Student Work
  - Student Work
Why?
MULTIPLE MEASURES?
How many times would you like to reliably measure each skill?

How many times can you practically measure each skill?
Can we create a valid and reliable system without every component in the assessment system being so?
Which Driver do you want?
What Vermont Did: Portfolios

• Students gather evidence that they have achieved proficiency on each of the Transferable Skills from all aspects of their high school careers.

• Advisors help them build their portfolio of evidence.

• When students have selected a piece of work as evidence of proficiency, they submit their work, along with their rationale, to the teacher, coach or mentor with whom they did the work.

• This teacher/coach/mentor will then decide whether to approve their work as part of their portfolio. The approval would get sent to the student and their advisor; if the work was approved, the student includes that work in their portfolio.
### Scoring Criteria

#### Problem Solving

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Beginning</th>
<th>Developing</th>
<th>Proficient</th>
<th>Distinguished</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Observe and evaluate situations in order to define problems.</strong></td>
<td>I can • make observations about situations.</td>
<td>I can • identify relationships to make inferences about a problem; • propose possibilities to define a problem.</td>
<td>I can • make observations and collect related information from multiple sources; • articulate the problem and identify constraints.</td>
<td>I can • analyze situations to define complex problems and explain their relevance within the world.</td>
</tr>
<tr>
<td><strong>B. Frame questions, make predictions, and design data collection and analysis strategies.</strong></td>
<td>I can • ask questions about a situation; • find information in sources provided for me.</td>
<td>I can • ask questions to clarify my understanding; • take information into consideration when making predictions.</td>
<td>I can • ask probing questions about a situation; • make predictions considering multiple sources of information; • identify tools and design procedures needed for collecting, managing, and analyzing information.</td>
<td>I can • justify my design by analyzing strengths and weaknesses; • connect the situation to a larger context and make a prediction based on that context.</td>
</tr>
<tr>
<td><strong>C. Identities and perspectives. Identify and analyze patterns, trends, and relationships in the data or information.</strong></td>
<td>I can • describe the data/information I have gathered.</td>
<td>I can • identify simple patterns and trends in my data/information; • determine whether my data are sufficient or if I need to gather more data/information.</td>
<td>I can • identify patterns and trends in data/information; • analyze these patterns and trends to identify relationships.</td>
<td>I can • identify data crucial to the problem; • identify and prioritize patterns and trends in data/information most relevant to the problem.</td>
</tr>
<tr>
<td><strong>D. Based on analysis of the data or information, generate options and use evidence to build a case for the best response.</strong></td>
<td>I can • identify strategies that could be used to solve a problem; • propose a simple solution.</td>
<td>I can • explain my analysis of the data or information; • list possible solutions for the problem.</td>
<td>I can • create a list of possible solutions for the problem based on my analysis of the data/information; • choose a workable solution and explain my reasoning.</td>
<td>I can • create a list of possible solutions for the problem based on detailed and thorough analysis of complete and sophisticated data/information;</td>
</tr>
</tbody>
</table>
Problem Solving

• How would this student score?
• Why?
• Return to your original triad and come to agreement
Device Dilemma?

What angle should the device state for your players to build appropriate muscle memory?
Background

As a coach, one of your main priorities is to help develop proper shooting for your young athletes. The device in the local gym helps build the appropriate form through stating the angle at which the ball enters the hoop after every shot. For the average person, the optimal angle is forty-five degrees. They can adjust their shot to achieve this angle over a series of shots. This is done from the foul line, 13.75 feet from the center of the basket. The ball is released around 7 feet. Due to the fact, your third/fourth graders shoot at a different range, are shorter, therefore having a shorter release, there are some components to consider.
Background

continued

Third/Fourth Grade Components

<table>
<thead>
<tr>
<th>Distance</th>
<th>Height</th>
<th>Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every student takes the shot two feet closer than a normal free throw. This means they release the ball 11.75 feet away from the center of the hoop.</td>
<td>The average third/fourth grader is only 4.5 feet.</td>
<td>Because the students are shorter than the ‘average’ shooter, they release the ball at a lower height (around 5.5 feet).</td>
</tr>
</tbody>
</table>

What this means…
The degree the device will state for the third/fourth graders shoot will be greater than $45^\circ$ because they are shorter and closer to the hoop, therefore they need a steeper arc in order to make the shot.
Solving Process

To begin solving the prompt of what angle the device should state for the students, I gathered some background information about angles through *The Washington Post*. I learned that the device measures the angle of a shot based on the rim and the trajectory of the shot. To prove that the angles vary for different heights and distances, I created my own video, using a friend’s shot. To solve, I graphed the parabolas on Desmos, an online graphing website.
I wanted to make sure that all the angles were correctly measured. I put a protractor on this graph because I already was given the degrees of each parabola from an online article called ‘Building The Perfect Arc’. The protractor angles are equal to the degrees listed. This shows the accuracy of the protractor and parabola.

Blue = 53°
Green = 45°
Red = 35°
Using the app, Superimpose, I created one picture out of a video capturing the shot of a friend. I created a parabola following the shot. Then, I placed a protractor flat on the rim. If you follow the course of the arc, you have an entry angle of 54°. The angle of 54° makes sense in relation to the optimal angle. Anne, the shooter, is about 5.5 feet tall. She releases at 6.5 feet. Because she is shorter than the average shooter, her ball entry angle will be greater.

\[ y = -0.14(x-7)^2 + 13.75 \]

Ball Entry Angle: 54°

Trajectory Course
The graph to the left shows the arc (orange parabola) of an optimal shot for a third/fourth grader. The player released the ball at 5.5 feet (D). It enters the hoop at the intersection of G and A. Which is a ‘nothing but net’ shot. Above is a closeup on the protractor. The straight line is equal to the 59° angle.
Overall...

I fabricated graphs based off of articles, websites, peers, and other resources, finding the optimal angle for third/fourth graders.

Recap:

Q. What angle should the device state for your players to build appropriate muscle memory?

A. 59°

As a third/fourth grade coach you should be helping your players build their muscle memory by shooting the ball with an entry angle of 59°.
Works Cited


Problem Solving

- How would this student score?
- Why?
- Return to your original triad and come to agreement
If you implement a system to measure transferable skills, what are the implications for:

- Giving and expecting homework?
- Accepting late work (or not)?
- Using grades to coerce appropriate behavior?
- Determining co-curricular eligibility?
- Designing and using transcripts?
Proficiency-Based Learning Simplified
A Great Schools Partnership Learning Model

www.greatschoolspartnership.org/proficiency/

- State + Local Policies
- State + Local Standards
- Assessment + Verification
- Grading + Reporting
Preparation for April

- Identify a school to visit
- Spend time in enough classrooms to be able to identify:
  - What are the most common instructional strategies used across the school?
  - What is your evidence regarding your understanding?
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