Instructional Leadership for Life-Long Learning: Rigor, Relevance and Reflection

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Note: Videos and images have been removed to reduced file size

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Agenda
- Rigor / Relevance
- Teacher reactions
- Strategies in action
  - Defining
  - Summarizing
  - Comparing
Staff development should model what you expect to see in the classroom.

Two Essential Leadership Questions

1. Have we created a shared vision of teaching and learning?
2. How do we organize to achieve the vision?
Key components of the vision:

- Rigor
- Relevance
- Reflection

What skills will the 21st century workplace require?

- Literacy
- Numeracy
- Self-discipline

Creativity and adaptability: they must be flexible independent learners.

Program for International Student Assessment (PISA) is an assessment (begun in 2000) that focuses on 15-year-olds’ capabilities in reading literacy, mathematics literacy, and science literacy.

Where was the lowest speed recorded during the second lap?

1. At the starting line
2. At about 0.8 km
3. At about 1.3 km
4. Halfway around the track

Correct Answer is 3. 1.3 km
85% Average of all 15-yr-olds
Problem solving: ... an individual’s capacity to use cognitive processes to confront and resolve real, cross-disciplinary situations where the solution is not immediately obvious. ... and where the literacy domains or curricular areas that might be applicable are not within a single domain of mathematics, science, or reading.

Bloom’s Taxonomy of Thinking Skills

- Creating - generating new ideas
- Evaluating - justifying a decision or choice
- Analyzing - breaking into component parts
- Applying - using information in a new setting
- Understanding - explaining idea or concept
- Remembering - recalling information
Creating A new combination of old elements

Creating A new combination of old elements
... information, stories, data, art, music, literature, strategies...

Students are motivated by Relevance

Taking responsibility for their learning

Learning is relevant when the student:

- understands how this information or skill has some application in their life.
- has an opportunity to follow their own process rather than just learn “the facts.”
- is not just learning content and skills, but is learning how they learn.
**Motivating Life-long Learners**

#1 factor for improving student motivation is choice.

Not whether the student does the assignment, but how they engage in the work.

~Doug Reeves

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**Justin, a second grader, talks about math**

> Math is when you add or subtract numbers. And your teacher will make sure you have the right answer.

From: *Math Is Language Too: Talking and Writing in the Mathematics Classroom* Phyllis Whitin

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**Question:** A cruise ship carries 200 passengers and crew. Each life boat carries 30 people. How many lifeboats will the ship need?

Almost one-third of the 8th graders who took the NAEP math test answered “6 remainder 20”

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**From a high school valedictorian:***

“I could **memorize** very easily, and became valedictorian.

But I was **embarrassed** that I **understood much less** than some other students who cared less about grades.

I felt that my **brain** was a way station for **material going in one ear** and (after the test) **out the other**.”

~ High School Student quoted in Wiggins and McTighe *Understanding by Design*
Move students toward greater relevance

Using skills and knowledge in routine school setting.

**Work as directed by the teacher.**

Using skills and knowledge for myself in the real world.

**Figuring out my own approaches.**

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**Rigor and Relevance Framework**

Willard Daggett – ICLE
Quadrant A
Gather and store bits of knowledge and information. Primarily expected to remember or understand this knowledge.

Example
Pick the right definition.

Quadrant B
Apply knowledge in real-life situations.

Example
Compare car lease to loan.
Quadrant C: Use knowledge to analyze and solve school-based problems and create solutions. Work under the specific directions of the teacher.

Example: Develop categories for types of plants.

Quadrant D: Apply knowledge and skills in complex ways to analyze and solve real problems and create solutions. Confront real-world unknowns.

Example: Take part in a science fair and respond to questions.

It's not just about Quadrant D ... it's about using a variety of approaches.

How do teachers feel about rigor and relevance?

Responses from 200 American middle and high school teachers.
Look for answers to these questions in the data:

- Where are the opportunities?
- What holds teachers back?

The teachers said...

- Most lessons are taught:
  - 80% taught A
  - 20% taught B
  - 0% taught C
  - 0% taught D

- Hardest to prepare:
  - 50% prepared A
  - 25% prepared B
  - 20% prepared C
  - 5% prepared D

- Hardest to teach:
  - 40% taught A
  - 35% taught B
  - 20% taught C
  - 5% taught D
The teachers said ... hardest to manage the classroom

The teachers said ... hardest to evaluate

If instruction is student centered...

Shouldn't students be involved in evaluating their own progress?

Higher and lower-order reflection by students

- Creating
- Evaluating
- Analyzing
- Applying
- Understanding
- Remembering

I can describe patterns, create my own connections, and assess my progress

I can tell you what I did, but don’t expect me to think about it
Reflective Questions for Students

- **What** am I learning today?
- **Why** am I learning it?
- **How can I use** this knowledge and these skills to make a difference in my life?
- **How can I work** with teachers and other students to improve my learning?
- **How am I progressing** as a learner?
- **How can I communicate** what I’m learning with others?

**Students are motivated by Reflection**

They monitor and assess their own progress as life-long learners.

**Rigor, relevance, reflection - when using three strategies**

- **Defining:** negotiating meaning
- **Summarizing:** synthesis and judgment
- **Comparing:** assessing similarities and differences

Robert Marzano: *What Works in Schools*

“35 years of research concretely identifies the factors that are the primary determinants of student achievement.”

Defining negotiating meaning.

Key look for when teaching defining

- Before the dictionary comes out... connect students with their prior knowledge
- After the term has been defined ... give students chances to more deeply process the term

Personal Vocabulary Notebook
Prior knowledge plus processing

1. Term:
2. Student Definition:
3. Dictionary Definition:
4. Student comparison of 2 and 3:

Students use prior knowledge to generate a preliminary definition. Then use their definition to explore the dictionary definition.

Reading for Academic Success ~ Strong and Silver
Personal Vocabulary Notebook
Prior knowledge and processing

1. Term: Segregation

2. Student Definition: A time when African-Americans used to have separate schools

3. Dictionary Definition: The policy or practice of forcing racial groups to live apart from each other

4. Student comparison of 2 and 3: I thought of segregation more as a time period, but the dictionary calls it a practice or policy

Reading for Academic Success ~ Strong and Silver

Building Academic Vocabulary - Bob Marzano
Check for understanding - 4th graders midpoint in unit on electricity

If you were discussing electricity, what words would you use?
What words might you find in a book about electricity?

In 15 minutes teacher got insight into what students knew, recognized (with some uncertainty) or never made it on either list.
“They know more than I thought about electricity!”

Defining:

- A chance for reflective writing
  - How is the word related to something else I learned in school?
  - How is the word related to something else in my life?
  - How is the word used in different situations?
  - How has my understanding of the word grown?

Negotiating and sharing meaning in a social context
Summarizing builds content knowledge

Research shows student use of summarizing skills results in a 34-percentile gain in student performance.

Group 1: Teacher lectures on the essential characteristics of mammals

Group 2: Teacher lectures, then students do a summarizing exercise on the essential characteristics of mammals

34% gain in content mastery

Classroom Instruction that Works, ASCD, 2001

Summarizing

Evaluating what’s important.

Sharing what you’ve learned.

Six essential summarizing skills

- **Identify details** – can you identify key symbols, words, visual elements?

- **Recognizing context** – where is this taking place, time period, who’s involved?

- **Identify relationships** – who are these people, what is their relationship to one another?
Continued - Summarizing skills

- Identify opinions – is there a point of view expressed in the source information?
- Make predictions – based on the information, what will happen next?
- Infer meaning – is there meaning that can be extracted from what’s between the lines?

Elements for teaching summarizing

- Allow students to make their own judgements about what’s important (instead of just repeating the details the teacher highlights)
- Students need to be able to share what they’ve learned with an audience other than the teacher.

foot [fʊt], noun (pl. feet [fɛt])

(Anat.) The terminal part of the leg of man or an animal; esp., the part below the ankle or wrist; that part of an animal upon which it rests when standing, or moving.
Explaining what you’ve learned is telling a story using a narrative structure.

- Student may need explicit training about narrative structures.
- Recognizing how information is organized helps to analyze original work and summarize it for their audience.

### Informational Pattern

<table>
<thead>
<tr>
<th>Description</th>
<th>Cue Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes a topic by listing characteristics, features, and examples</td>
<td>for example, characteristics are</td>
</tr>
<tr>
<td>Explains how two or more things are alike and/or how they are different.</td>
<td>different; in contrast; alike; same as; on the other hand</td>
</tr>
<tr>
<td>Lists one or more causes and the resulting effect or effects.</td>
<td>reasons why; if...then; as a result; therefore; because</td>
</tr>
<tr>
<td>States a problem and lists one or more solutions for the problem.</td>
<td>problem is; dilemma is; puzzle is solved; question... answer</td>
</tr>
<tr>
<td>Lists items or events in numerical or chronological order.</td>
<td>first, second, third; next; then; finally</td>
</tr>
</tbody>
</table>

### Summarizing: a chance for reflective writing

- What did I think was important?
- How did I share that with my audience? (Did my summary match audience / purpose?)
- Is the summary accurate?
- Did I use my own words and style?
- What did I learn from the summarizing?
Research shows student use of comparing skills results in a 45-percentile gain in student performance.

Group 1: Teacher lectures on the essential characteristics of mammals

**Group 2:**
Teacher lectures, then students compare the essential characteristics of mammals to birds

Comparing builds content knowledge

Classroom Instruction that Works, ASCD, 2001

“Compare the animals and climate of the rain forest and desert.”

<table>
<thead>
<tr>
<th>Rain Forest</th>
<th>Desert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave rainfall 450 centimeters/year</td>
<td>Ave rainfall 15 centimeters/year</td>
</tr>
<tr>
<td>High Humidity</td>
<td>Low humidity</td>
</tr>
<tr>
<td>No frosts</td>
<td>Frequent frosts</td>
</tr>
<tr>
<td>Little variation in temp-average 26°C</td>
<td>Big variation in temp</td>
</tr>
<tr>
<td>Ave low 17°C</td>
<td>Low 13°C</td>
</tr>
<tr>
<td>Spider Monkey</td>
<td>High 48°C</td>
</tr>
<tr>
<td>Pit Viper</td>
<td>Bats</td>
</tr>
<tr>
<td>Three-toed Sloth</td>
<td>Iguana</td>
</tr>
<tr>
<td>Jaguar</td>
<td>Ants</td>
</tr>
<tr>
<td>Giant River Otter</td>
<td>Tarantula</td>
</tr>
<tr>
<td>Bats</td>
<td>Coyote</td>
</tr>
<tr>
<td>Iguana</td>
<td>Desert Tortoise</td>
</tr>
<tr>
<td>Ants</td>
<td>Rattlesnake</td>
</tr>
</tbody>
</table>

Comparing builds content knowledge

Evaluating similarities and differences.

Sharing what you learned.

Classroom Instruction that Works, ASCD, 2001

“I can guess what the teacher thinks is important.”

Evaluating what you think is important. Creating an appropriate summary for an authentic audience.
Do you give students chances to develop their comparative models?

- They could select items to compare from a teacher-produced list.
- They could independently decide what to compare.
- Can include some combination of selecting both the items and/or characteristics.

How is the comparison useful? What do you learn from it?

Students can do comparisons in every class.

What’s more important in a sport … strength or agility?
Key look fors when teaching comparing and classifying

- We must ask students to develop the comparison, not just learn and repeat the model that we present to them.
- Student must share what they learned from the comparison.

Comparing and Classifying: a chance for reflective writing

- What did I compare?
- How did I structure the comparison?
- How was the comparison useful to me?
- What did I learn from it?
- How did others design their comparisons?

6th graders write ABC book

- Students study the organs of the body
- Develop a comparisons
- Create an ABC book

What process did you use to complete the project?

We organized and decided who was going to do what and how. Then we read everything over to see if everything made sense to our audience.
I can repeat someone else’s comparison. 

Analyzing components. Evaluating schema. Creating a comparison to share what you’ve learned with an authentic audience.

When do we stop modeling for students and let them take responsibility for their learning?

Rigor - analyzing, evaluating, creating
Relevance - students select their strategy
Reflection - student evaluates their progress

Product that asks students to communicate their thinking.
Motivating Life-long Learners

#1 factor for improving student motivation is choice.
Not whether the student does the assignment, but how they engage in the work.

~Doug Reeves

Traditional Writing is Assigned | Writing Assigned with Choice
---|---
Students are asked to write only on the teacher's topics. | Students can develop topics that matter to them.
Student writes for the teacher. | Audience and purpose for writing is identified.
Teacher grades their writing. | Students are asked to reflect on their growth.

Information is everywhere.
It’s not “what” you know, it’s what you can do with it.

Tough Choices or Thought Times
Report on Employability in 21st Century

“Creativity, innovation, and flexibility will not be the special province of an elite. It will be demanded of virtually everyone who is making a decent living.”
Our students will also need marketable “soft skills”
- Problem-solving
- Collaboration
- Communicating
- Networking

Our goal – students who will be able to function in an unpredictable world.

Learn to research, think, problem-solve and write like a
- scientist, engineer,
- coach, artist,
- historian, writer,
- mathematician,
- musician ….

Two Essential Leadership Questions

1. Have we created a shared vision of teaching and learning?
2. How do we organize to achieve the vision?