Assessing 21st Century Skills

NESA Spring Educators Conference (Bangkok, Thailand)
March 29-31, 2019

Tom Schimmer
THE BIG PICTURE

Means & Ends
(Switching Places)

Curricular Content
• English
• Social Studies
• Math
• Science
• Languages
• P.E.
• Fine and Applied Arts

Critical Competencies
• Critical thinking
• Creative thinking
• Collaborative thinking
• Communication
• Digital citizenship
• Social competence
• Self-regulation

“When fast gets really fast, being slower to adapt makes you really slow – and disoriented.”

-Thomas Friedmann

“If the technology platform for society can now turn over in five to seven years, but it takes ten to fifteen years to adapt to it, we will all feel out of control, because we can’t adapt to the world as fast as it’s changing.”

-Eric Teller
CEO of Google’s X Research

Essential Assessment

“The formative and summative purposes of assessment can be so intertwined that they are mutually supportive rather than conflicting. Unless this is done, formative assessment cannot achieve its full potential to improve learning.”

—P. Black, 2013
Performing Under Pressure (Weisinger & Pawliw-Fry, 2015)

• **STRESS**: Situation of too many demands and not enough resources.

• **PRESSURE**: Situation where something at stake is dependent on the outcome of your performance.

  “When we confuse daily stressful situations for pressure moments, we react physically, mentally, and behaviorally in ways that are out of proportion to the circumstances. The danger lies in the fact that continually confusing stress for pressure habituates, and we lose the ability to think clearly. Misdiagnosing stress as pressure reduces our abilities needlessly.”

  -Weisinger & Pawliw-Fry, 2015

“The attributes of a pressure moment – importance, uncertainty, responsibility to others, and feeling judged – are all factors that have the potential to stimulate feelings of fear, anxiety, failure, embarrassment, and stress. These are powerful psychological and physiological forces that can be helpful in the right context, but not pressure situations. While they were often helpful to your ancestors in pressure moments...today these “primal pressure reactions,” if unskillfully managed, have the potential to prevent you from doing your best by limiting your brain’s capacity to effectively respond.”

  -Weisinger & Pawliw-Fry, 2015

**The COTE of Armor**

- Confidence
- Optimism
- Tenacity
- Enthusiasm
## Assessment Tenets Survey

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Essential Assessment: <em>Six Tenets for Bringing Hope, Efficacy, and Achievement to the Classroom</em></th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>E P D N</td>
<td>Assessment Purpose: Understanding our assessment purpose means we have a clear picture of how we intend to use the emerging assessment results <em>before</em> the assessment. The formative purpose of assessment is about continual learning; the summative purpose is about the verification of learning. Though they serve a different purpose, formative and summative assessment can develop a seamless, mutually supportive relationship.</td>
<td>C U S R</td>
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<td></td>
<td>Assessment Architecture: Assessment is most effective when it is planned, purposeful, and intentionally sequenced in advance of instruction by all of those responsible for the delivery. Assessment Architecture is a blueprint that tightly sequences essential standards; teases out learning targets; identifies the assessments that reflect learning targets; and determines the use of assessments.</td>
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<td></td>
<td>Accurate Interpretation: The interpretation of assessment results must be accurate, accessible, and reliable. This means the items and tasks in our assessments must accurately reflect the standards we are gathering information on. Essential to the accurate interpretation is clear criteria, aligned inferences of what the criteria represents, and the continual calibration to avoid inconsistencies or tangential influences.</td>
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<td></td>
<td>Instructional Agility: Being <em>instructionally agile</em> means teachers have the capacity to use emerging evidence to make real-time modifications within the context of the expected learning. Whether at the classroom or school level, the true power of assessment comes when emerging results are used to determine what comes next in the learning.</td>
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<td></td>
<td>Communication: The communication of assessment results must generate productive responses from learners and all stakeholders who support them. Whether through feedback or grades, the communication of proficiency must serve as a catalyst for continual learning.</td>
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<td></td>
<td>Student Investment: There is a symbiotic relationship between assessment and self-regulation. When learners understand this, they are able to track their progress, reflect on what they are learning and where they need to go next.</td>
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</tbody>
</table>
Six Tenets and the Critical Competencies (Erkens, Schimmer, & Vagle, 2019)

• Assessment purpose:
  *Still necessary to unpack/repack; still necessary to balance FA with SA.*

• Assessment architecture:
  *Ensure that tasks are well designed so as to elicit authentic, sophisticated evidence of thinking.*

• Accurate interpretation:
  *Accurate inferences and interpretations by the teacher will be necessary since performance assessment is likely to be prominent.*

• Instructional agility:
  *Make ‘real-time’ maneuvers based on emerging results, evidence, or revelations; students as the thinkers.*

• Communication of results:
  *Feedback (and verification) of strengths and areas in need of strengthening as students develop the skill/will of the competencies*

• Student investment:
  *Student-driven, metacognitive experiences make it essential that students learn how to own & invest in their development.*

“The accuracy of summative judgments depends on the quality of the assessments and the competence of the assessor.”

-C. Moss (2013)

Five Minds for the Future (Gardner, 2010)

1. **Disciplined Mind:** People will need to develop an expertise in one or more discipline; people will need to be disciplined.

2. **Synthesizing Mind:** People will need to acquire, probe, and evaluate information on a continual cycle.

3. **Creating Mind:** People will face situations that require thought beyond careful or habitual practice; creation is the stretch.

4. **Respectful Mind:** People will need to be open to diverse perspectives, processes, and people; diversity is welcome, good, and necessary.

5. **Ethical Mind:** People will need to be able to see and think of themselves abstractly; what type of person do I want to be?
Performance Assessment

Why Performance Assessment (Linn, 1993)

• Allow for demonstrations of important and meaningful learning targets that cannot be easily assessed with other formats.

• They serve as exemplars of tasks that stimulate and enrich learning rather than just serve as indicators of learning.

• They help shape sound instructional practices by modeling to teachers what is important to teach and to students what is important to learn.

Intent (Lane, 2010)

• Generalization? Then adequate sampling across the domain or discipline is required.

• Finite performance? Then more specific tasks & criteria are more appropriate.

• Formative? Then a much narrower scope is more fitting.

Clarity (Mislevy, Steinberg, & Almond, 2003)

• We must be clear on both the content and the cognitive processes that are being assessed.

• What performances will reveal a level of proficiency with that content and/or cognitive processes?

• What tasks will most likely lead to those performances?

“The genius of rubrics is that they are descriptive and not evaluative. Of course, rubrics can be used to evaluate, but the operating principle is you match the performance to the description rather than judge it.”

-Susan Brookhart, p. 4
How to Create and Use Rubrics for Formative Assessment & Grading
**Rubric Types**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytic</td>
<td>Breaks down the criteria into specific aspects of quality</td>
<td>Specificity as to what is strong and what needs strengthening; excellent for formative assessment.</td>
<td>Challenging to create. Can be cumbersome for summative assessment, especially when an overall level of quality is being determined/recorded.</td>
</tr>
<tr>
<td>Holistic</td>
<td>Provides a much broader, overall description of quality along several levels (i.e. 3-5)</td>
<td>Reliability with scoring inferences is much more readily attained; excellent for summative assessment.</td>
<td>The lack of detail makes them a challenge to use for instruction and feedback purposes.</td>
</tr>
<tr>
<td>Single-Point</td>
<td>Breaks down the criteria into specific aspects of quality, but only describes the highest level of proficiency.</td>
<td>The space beside each specific aspect is used for personalized comments on what is strong and what needs strengthening.</td>
<td>Significantly more time consuming to complete, which could increase the turnaround time for feedback.</td>
</tr>
</tbody>
</table>

Adapted from: Balch, Blanck, & Balch, 2016

**Using Rubrics**

- Thoroughly explain the rubric AND/OR co-construct the rubric/success criteria with students.
- Allow students to practice using the rubric (exemplars) prior to it being applied to their work.
- Provide clear direction on meaning, language, and phrasing if the rubric is to be used for peer assessment activities (self-assessment).
- Make sure the rubric is directly connected to the specific standard(s) being assessed.
- Be thoughtful about using generic rubrics: (+) Clear & Consistent (-) Potentially an awkward fit for specific assignments.

**Self-Assessment**

**Self-Assessment Prerequisites**

- Clear learning goals.
- Clear success criteria
- Clear interpretation of the criteria.
- Culture where being wrong publicly is supported.
- Classroom culture with a norm of working together.
- Students who have some proficiency.
- ________________________________


1. A tendency for humans to be overly optimistic about their own abilities.
2. A tendency for humans to believe they are above average.
3. A tendency for humans to neglect crucial information.
4. A tendency for humans to have deficits in their information.

Self-Regulation of Learning (Zimmerman, 2011)

- Forethought Phase
  - Task Analysis (Set goals and plans)
  - Self-Motivation Beliefs (Self-efficacy, interest, goal orientation, and outcome expectancies)
- Performance Phase
  - Self-Control (Using a various task, interest, and management strategies)
  - Self-Observation (metacognitive monitoring and self-recording)
- Self-Reflection Phase
  - Self-Judgment (self-evaluation and causal attribution)
  - Self-Reaction (affect, satisfaction, and potentially adaptive or defensive responses)

“Peer assessment is generally an arrangement for classmates to consider the level, value, or worth of the products or outcomes of learning of their equal-status peers. However, it can also extend to learning behavior or social behavior and sometimes encompass both academic products and associated behavior.”

-Keith J. Topping (2013)

Peer Assessment Options (Topping, 2013)
- Qualitative? Quantitative? Both?
- Single sample? Multiple? Varied?
- Balanced feedback? Only one (+/-)?
- Opportunity to act?
- Individual? Pairs? Groups?
- Reciprocal? One-way? Group?
- Deliberate matching? Random?
- Same year? Different year?
- Same ability? Different ability?
Critical Thinking

Critical Thinking Now and Going Forward (Erkens, Schimmer, & Vagle, 2019)

• Student-Driven Critical Thinking
  • Inquiry-based learning
  • Problem-based learning

• Transferable Skills
  • Transferable and applicable to contexts beyond the school.

• Metacognitive Monitoring
  • Self-observe, self-react, self-motivate, and self-control their growth as critical thinkers.

The Skill and the Will of Critical Thinking

<table>
<thead>
<tr>
<th>Critical Thinking Skills</th>
<th>Critical Thinking Behaviors</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Distinguish fact from opinion</td>
<td>• Asks questions that furthers understanding.</td>
<td>• Well-thought out decisions based on a sound rationale and evidence.</td>
</tr>
<tr>
<td>• Seek multiple perspectives</td>
<td>• Doesn’t draw conclusions too hastily.</td>
<td>• Information, conclusions, and decisions are revised as new information coned to light.</td>
</tr>
<tr>
<td>• Recognize assumptions</td>
<td>• Considers all sides of an argument.</td>
<td>• Decisions reflect a “systems thinking” rather than “silo” approach.</td>
</tr>
<tr>
<td>• Identify bias and persuasion</td>
<td>• Uses criteria to evaluate information.</td>
<td>• Information evaluated based on evidence, logical inference, and informed guesses.</td>
</tr>
<tr>
<td>• Evaluate arguments for relevance and accuracy.</td>
<td>• Can “push back” effectively.</td>
<td>• Ideas and plans are presented in a coherent and well thought out fashion.</td>
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<tr>
<td>• Weigh data appropriately.</td>
<td>• Recognizes other people’s agendas.</td>
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<tr>
<td>• Use multiple sources rather than a single source.</td>
<td>• Explores multiple perspectives.</td>
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<tr>
<td>• Balance logic and emotion.</td>
<td>• Adjusts assumptions in light of new evidence.</td>
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<tr>
<td>• Use diagrams to visually represent processes and thinking.</td>
<td>• Understands how conclusions were drawn.</td>
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<tr>
<td></td>
<td>• Identify what’s known and what isn’t.</td>
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</tbody>
</table>

Source: Linda M. Murawski (2014)

Balanced Approach

• The generalist view of critical thinking would have discrete skills being easily transferable so that once learners know how to think critically they can and will apply it across multiple settings and disciplines.

• The specialist view would have critical thinking skills tied to a specific subject, which would make critical thinking skills context dependent instead of easily transferrable; that thinking always involves thinking about something.
Implication for Schools

- Balance is most favorable.
- **Generalist approach** when identifying the skills of a critical thinker.
- **Specialist approach** in having those generic skills taught throughout specific-subject domains.
- Emphasizes the application of critical thinking skills is emphasized.
- Defining critical thinking is meant to bring some necessary clarity to a somewhat abstract concept.

“The ability to think critically—ask pertinent questions, recognize and define problems, identify arguments on all sides of an issue, search for and use relevant data and arrive in the end at carefully reasoned judgments—is the indispensable means of making effective use of information and knowledge.”

-Derek Bok

*Our Underachieving Colleges, p. 109*

<table>
<thead>
<tr>
<th>Critical Thinking Dispositions Rubric</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Usually</th>
<th>Consistently</th>
</tr>
</thead>
<tbody>
<tr>
<td>I ask questions to further my understanding of the challenge at hand.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>I consider the strengths and limits of all sides of an argument.</td>
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<tr>
<td>I use criteria to evaluate the credibility of the information I gather.</td>
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<tr>
<td>I draw conclusions that are logical and measured.</td>
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<tr>
<td>I can recognize bias in other people’ positions</td>
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<tr>
<td>I can adapt and adjust my position when new information emerges.</td>
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<tr>
<td>I am open and honest about my own potential biases.</td>
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<tr>
<td></td>
<td>Initiating</td>
<td>Developing</td>
<td>Achieving</td>
<td>Advancing</td>
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<td>----------------------------------------------------------------------------</td>
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<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Organizing &amp; Presenting data</strong></td>
<td>There are significant omissions or inaccuracies that interfere with the overall understanding of what is presented.</td>
<td>There are often omissions or inaccuracies that interfere with the overall understanding of what is presented.</td>
<td>There may, at times, be some minor omissions or inaccuracies, but nothing that interferes with overall understanding.</td>
<td>Data is consistently well organized and presented in a logical and way that makes it easy to understand.</td>
</tr>
<tr>
<td><strong>Making sense of data</strong></td>
<td>Recognizes only the most straightforward patterns and big ideas.</td>
<td>Recognizes some patterns and a few big ideas.</td>
<td>Recognizes important patterns and the crucial big ideas.</td>
<td>Recognizes insightful patterns and the inconspicuous big ideas.</td>
</tr>
<tr>
<td><strong>Evaluating the quality of the data</strong></td>
<td>Knows that critiquing the quality of evidence gathered is important, but rarely does it with any kind of precision; challenged to recognize why evidence lacks credibility.</td>
<td>Understands the importance of critiquing the quality of evidence gathered, but only does it under the most obvious circumstances; is able to explain why evidence lacks credibility when it’s glaring.</td>
<td>Critiques the quality of evidence gathered to ensure accuracy, relevance, and validity; is often able to explain why evidence lacks credibility</td>
<td>Critiques the quality of evidence gathered to ensure accuracy, relevance, and validity; is able to thoroughly and consistently explain why evidence lacks credibility.</td>
</tr>
<tr>
<td><strong>Deriving meaning from the data</strong></td>
<td>Draws only the most obvious conclusions that are overly simplistic; some conclusions are inaccurate</td>
<td>Inferences and conclusions are somewhat accurate, but often vague.</td>
<td>Inferences and conclusions drawn from data are accurate, but sometimes narrow in focus.</td>
<td>Inferences and conclusions are accurate and comprehensive.</td>
</tr>
<tr>
<td><strong>Making data-based decisions</strong></td>
<td>Rarely justifies decisions or solutions with accurate and relevant information; few new insights are identified and the limits of most other possible decisions or outcomes are ignored.</td>
<td>Sometimes justifies decisions or solutions with accurate and relevant information; insights are narrow, and the limits of most other possible outcomes are superficially acknowledged.</td>
<td>Often justifies decisions or solutions with accurate and relevant information; explains new insights and recognizes the limits of most other possible decisions or outcomes.</td>
<td>Consistently justifies decisions or solutions with accurate and relevant information; thoroughly explains new insights and recognizes the limits of all other possible decisions outcomes.</td>
</tr>
</tbody>
</table>

*Source: Erkens, Schimmer, & Vagle (2019)*
<table>
<thead>
<tr>
<th>Specific aspects in need strengthening</th>
<th>Advancing</th>
<th>Specific aspects of strength</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gathering data:</strong></td>
<td>Consistently gathers an appropriate amount of evidence.</td>
<td></td>
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<tr>
<td><strong>Organizing &amp; Presenting data:</strong></td>
<td>Data is consistently well organized and presented in a logical and way that makes it easy to understand.</td>
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*Source: Erkens, Schimmer, & Vagle (2019)*
Creative Thinking

Four Corners Activity

“Innovation and creativity are inextricably linked. It has been said that innovation is imagination realized and that only when the creative thought is put into action does innovation occur.”


4 Cs of Creativity (Kaufman & Beghetto, 2009)

<table>
<thead>
<tr>
<th>Mini</th>
<th>Little</th>
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<tr>
<th>Pro</th>
<th>Big</th>
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The Creative Process:

1. **Preparation**: Prepares by identifying an area of curiosity for further investigation.
2. **Incubation**: Incubates ideas by synthesizing, imagining, and constructing possibilities.
3. **Illumination**: Illuminates ideas with insights and/or epiphanies.
4. **Verification**: Seeks feedback and validation during the formative phase whether or not potential solution(s) is worth pursuing; self-assesses and makes personal decisions regarding concluding steps.
5. **Implementation**: Implements idea moving it from concept to reality.
The Instructional Questions for Teaching the Creative Process

<table>
<thead>
<tr>
<th>Phase Defined</th>
<th>Questions to Lead the Process</th>
<th>Questions to Guide Students’ Self Discovery</th>
</tr>
</thead>
</table>
| **Preparation:** Identifying an area of curiosity or a problem for further investigation. | - What are your passions?  
- What’s interesting to you?  
- What are the small (or big) things you wish you could fix for yourself or your loved ones?  
- What natural phenomena need more study or explanation?  
- What message would you like to send to the world?  
- What legacy would you like to leave behind? | - What specific strategies did I use while preparing?  
- What was hard to do / easy to do?  
- What helped me the most?  
- What did I do that slowed my own process? What hung me up from moving forward?  
- How could I improve my efforts in this phase?  
- What have I learned about myself? |
| **Incubation:** Pondering ideas by exploring intuition, synthesizing concepts, imagining possibilities, and preliminarily constructing possible products, processes, or solutions | - What are you noticing?  
- What’s interesting about that?  
- What would happen if . . . ?  
- If there were no hurdles, what could you do?  
- What’s a radically different way of looking at that?  
- How many possibilities can you consider?  
- How many different connections can you make?  
- What is your intuition telling you? | - What specific strategies did I use while pondering my idea(s)?  
- What tools or templates helped me?  
- When did I have my best thoughts? What was the time of day or the activities I was engaged in or the location / setting when I could think best?  
- Did daydreaming or playing help me at all?  
- Did I procrastinate at all? If I did, why? Did it help?  
- How could I improve my efforts in this phase?  
- What have I learned about myself? |
| **Illumination:** Developing realizations, insights, epiphanies, and inspiration. | - What’s captivating about that?  
- What do you see that others might not?  
- What did you learn that others might not know yet?  
- How might what you understand now make the world a better place for others?  
- What odd combinations just might work? | - What specific strategies did I use while becoming inspired or developing my insights?  
- Was I aware of a defining moment when I knew what I needed to do next?  
- If I didn’t have a defining moment, how did I make decisions about the best ways to proceed?  
- What criteria was I using to determine my next steps?  
- How could I improve my efforts in this phase?  
- What have I learned about myself? |
| **Verification:** Seeking feedback and validation during the formative phase as to whether or not potential solution(s) is worth pursuing; self-assessing, and making | - What are my criteria for quality?  
- Where would feedback be most helpful to me?  
  o On one criteria?  
  o On a single part of the project?  
  o On the whole thing?  
- Will others appreciate this work/idea?  
- Who can I ask? | - What specific strategies did I use while verifying my ideas?  
- Did I get enough feedback?  
- Was the feedback I received helpful?  
- How am I responding to positive feedback? To negative feedback? |
personal decisions regarding final steps.

- Who do I trust to help me?
- Who might know the most about this?
- How can I get a range of perspectives so I’m prepared for the final stage?
- What will I do with feedback I don’t like? How can I make sure I get some feedback that forces me to examine my work carefully?
- What am I doing with the feedback I don’t appreciate? Is my thought process helpful in that moment?
- Was I accurate in my self-assessment or was I too hard/easy on myself? How will I know?
- Am I clear about my next steps?
- How could I improve my efforts in this phase?
- What have I learned about myself?

Implementation:
Moving idea from concept to reality by producing the product, process, or solution to share with others.

- Is it finished?
- Is it working? Or is it pleasing?
- Am I ready to share it?
- Are others appreciating it? Using it? Understanding it?
- How do I feel about it?
- What makes me proud of it?
- Even though I’m done, what might I have done differently in hindsight?
- What have I learned through this process?
- What comes next? Where do I begin again?

- What specific strategies or actions did I employ while finishing?
- What was hard to do / easy to do?
- What (or who) helped me the most?
- What did I do that slowed my own process? What hung me up from moving forward?
- How could I improve my efforts in this phase?
- What have I learned about myself?

Critical Thinking Now & Going Forward

- Allowing for non-conformity.
- Embracing productive failure.
- Understanding the multi-facets of creativity.
- Removing bias as much as possible.
- Addressing value and plausibility.
- Teaching the creative process.

Creative Task Considerations

- Solid knowledge base
- Ample time
- Provocative challenges
- Lateral thinking or sharing
- Verification options
Collaborative Thinking

“Collaborative problem solving involves two different constructs—**collaboration and problem solving**. The assumption is that collaboration for a group task is essential because some problem-solving tasks are too complex for an individual to work through alone or the solution will be improved from the joint capacities of a team”

Fiore, 2017, p. 2

Matrix of Collaborative Problem-Solving skills for PISA 2015

<table>
<thead>
<tr>
<th></th>
<th>1. Establishing and maintaining shared understanding</th>
<th>2. Taking appropriate action to solve problem</th>
<th>3. Establishing and maintain team organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Exploring and Understanding</td>
<td>(A1) Discovering perspectives and ability of team members</td>
<td>(A2) Discovering the type of collaboration interaction to solve the problem, along with goals.</td>
<td>(A3) Understanding roles to solve problems</td>
</tr>
<tr>
<td>(B) Representing and Formulating</td>
<td>(B1) Building a shared representation and negotiating the meaning of the problem (common ground)</td>
<td>(B2) Identifying and describing tasks to be completed.</td>
<td>(B3) Describe the roles or team organization (communication protocols/rules for engagement)</td>
</tr>
<tr>
<td>(C) Planning and Executing</td>
<td>(C1) Communicating with team members about the actions to be/being performed</td>
<td>(C2) Enacting plans.</td>
<td>(C3) Following rules of engagement (e.g. prompting other team members to perform their tasks)</td>
</tr>
<tr>
<td>(D) Monitoring and Reflecting</td>
<td>(D1) Monitoring and repairing the shared understanding</td>
<td>(D2) Monitoring results of actions and evaluating success in solving the problem</td>
<td>(D3) Monitoring providing feedback and adapting the team organization and roles</td>
</tr>
</tbody>
</table>

*Note: The 12 skills have been labeled with a letter-number combination referring to the rows and columns for ease of cross-referencing later in the document. (Fiore, et al., 2017, p. 15)*

Collaboration Now & Going Forward (Erkens, Schimmer, & Vagle, 2019)

1. **Collaboration 1.0**
   a. *Means to an end.*
   b. *Collaboration was the chosen option.*

2. **Collaboration 2.0**
   a. *Collaboration as an end; developing the skills to act competently within a collaborative effort.*

3. **Collaboration 3.0**
   a. *Collaborative problem solving.*
   b. *Two purposes: collaboration and innovation*
Collaborative Task Considerations

1. Set the purpose (1.0, 2.0, or 3.0).
2. Determine the knowledge domain.
3. Choose the collaborative structure.
4. Define the tasks as interdependent or independent.
5. Determine the parameters (well-defined vs ill-defined).
6. Predesign talks as static or dynamic.
7. Identify the communication medium?
8. Determine the number of team members.
10. Set goals: team-based goals and/or individual.

Co-Constructing Criteria with Learners

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Your Thoughts (the learner – generated individually or in pairs)</th>
<th>Observable Attributes of this Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curiosity: Inquire and ask questions to clarify, connect, and generate ideas</td>
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<tr>
<td>Listening: Actively hear, paraphrase and summarize others’ ideas to deeply understand alternative or competing perspectives</td>
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<tr>
<td>Contributing: Offer new, radical and, sometimes, unpopular views</td>
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<tr>
<td>Committing through Conflict: Productively engage in and move through conflict – do not avoid it or unnecessarily incite it for the sake of argument</td>
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<tr>
<td>Consensus-building: Find ways to compromise – balancing practicality and orthodoxy—to provide innovative solutions</td>
<td></td>
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</tr>
<tr>
<td>Observing: Observe nonverbal and verbal words and actions to productively and honestly navigate dialogue, conflict and conflicting ideas</td>
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<tr>
<td>Strength-based focus: Capitalize on the strengths of individual group members, presume positive intentions</td>
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</tbody>
</table>
**Focusing:** Position the overall goal over an individual need to be right

**Knowing what to do when you don’t know:**
Embrace uncertainty with questions and a commitment to pursue information and next steps

**Synthesizing:** Explore and persevere to synthesize large amounts of information or competing perspectives; blend ideas to co-create and innovate

**Sourcing:** Discern the reliability of information through interrogating sources – authors’ perspectives, organizations, funding sources and other potential areas of bias; assess its reliability, its realistic potential, and competing and contradictory reports that counter the sources main argument

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### Assessing Collaboration

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Initiating</th>
<th>Developing</th>
<th>Achieving</th>
<th>Advancing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staying on Task</strong></td>
<td>I need lots of reminders to focus on the task.</td>
<td>I need some reminders to stay focused on the task.</td>
<td>I stay on task and can refocus on my own.</td>
<td>I stay on task and respectfully redirect the group to stay on task.</td>
</tr>
<tr>
<td><strong>Listening</strong></td>
<td>I tend to blurt out ideas and forget to listen to other’s ideas.</td>
<td>I sometimes hear other’s ideas.</td>
<td>I hear other’s ideas and can paraphrase their thoughts.</td>
<td>I listen to other’s ideas to understand what they are saying. I can summarize their ideas and contributions before sharing my own ideas.</td>
</tr>
<tr>
<td><strong>Contributing</strong></td>
<td>I blurt out my ideas or agree with others even when I have a different thought.</td>
<td>I offer ideas that reiterate others or are redundant.</td>
<td>I contribute ideas that add to the focus of the dialogue.</td>
<td>I offer new ideas, building on other’s ideas and providing a different view that pushes the conversation deeper.</td>
</tr>
</tbody>
</table>
Collaboration:

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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Inquired and ask questions to clarify</td>
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<tr>
<td>Inquired and asked questions to connect ideas and understand the team members’ roles</td>
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<tr>
<td>Inquired and asked questions to generate ideas</td>
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</tr>
<tr>
<td>Consensus-building:</td>
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<tr>
<td>Sought to understand others’ other’s points of view and</td>
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<tr>
<td>Found ways to compromise</td>
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<tr>
<td>Used those compromises to provide a viable solution</td>
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</tbody>
</table>

Problem-Solving

Explore and Understand

| Showed understanding of the nature of the problem | | | |
| Showed understanding of the components of the problem | | | |

Represent and formulate:

| Clearly communicates and articulates the solution offered with a well-thought out and thorough explanation of the process and evidence for each trial | | | |

Assessing Collaborative Thinking

Before Collaboration

- Clearly describe the nature of the collaboration such as 1.0 to learn or explore a concept; 2.0 to develop collaboration skills; or 3.0 to make a decision, solve a problem or produce an innovation; or any combination of these forms of collaboration.
- Provide criteria for the collaboration skills students will need to develop and or co-construct this criteria with students.

During Collaboration

- Observation: While this possibility is optional and not always feasible at the student level, it is helpful both from a metacognitive perspective for students and from a data gathering perspective for teachers to task students with observing and recording evidence of a specific, isolated feature. The evidence that is recorded and shared can supplement (endorse or challenge) the teacher’s observations.
- Self-assessment: Ask students to reflect informally on what worked and what needs work at various points throughout the collaboration. Use the criteria so students can provide specific examples about what worked and what was challenging.
- Peer-assessment: Ask students to reflect on the effectiveness of their entire collaboration and what is working and what is not. This allows the teacher to understand the level of
understanding individuals have in assessing effective collaboration and to do some instruction or conversation if there are misunderstandings.

- **Intentionally guide reflection** on specific aspects of collaboration. For example, if you want students to learn how to deal with conflict, specifically ask them to reflect on various ways to handle conflict.
- **Refine the criteria** as the collaboration unfolds. It is one thing to pre-determine criteria and important to have a picture of what the end looks like. However, applying the criteria is provides another view of clarity and often leads to clear language and descriptions of what collaboration looks like.
- **Use checklists, rubrics** and other reflection forms to gather in the moment checks so students and the teacher can provide midcourse corrections and adjustments to make the collaboration as effective as possible.

**After Collaboration**

- Provide opportunities for **self-assessment**: Ask students to reflect on their perceptions of their own collaboration skills. Use a rubric or descriptions that have been generated over the course of the project so that there is a clear picture of quality.
- Provide opportunities for **peer-assessment**. Ask students to reflect on individual members of the collaboration and provide specific examples.
- Provide an **overall description of the level of proficiency** on the agreed upon criteria.

**Social Competence**

“There is growing evidence from international longitudinal studies that clearly suggests noncognitive factors play a critical role in one’s success as a citizen.”

— Yong Zhao (2016)

“If our objective is to improve student behavior, then our first obligation as teachers and leaders is to describe with clarity and specificity the behavior that we wish to achieve.”

— D. Reeves, (2011)

**Social Competence & Social Skills (Maag, 2006)**

- **Social competence** is a general idiom referring to the adequacy of social functioning.

- **Social skills** are the specific behaviors targeted as part of social skills training.
Social Competence Now & Going Forward (Erkens, Schimmer, & Vagle, 2019)

1. **Purposeful Outcome**
   
   What was once a seemingly hidden curriculum is now a front-end construct that teachers must actively seek to develop in each and every learner.

2. **Intentional Assessment**
   
   Still important to identify the discrepancy between the learner’s current status and the desired state.

3. **Productive Disruption**
   
   Some of the social competencies teachers are working to develop cut across what has been traditionally thought of as the right way to act in school.

**Portfolios**

The Case Against Percentage Grades (Guskey, 2013)

- **Logistics**
  
  How many levels can we distinguish? How many do we need?

- **Accuracy**
  
  More categories require finite distinctions, increases subjectivity, diminishes reliability.

- **Percentage correct**
  
  Assessments vary widely in their design & complexity that percentage current isn’t always a clear indicator; no distinction between the types of errors.

- **Distortion of Zero**
  
  The percentage scale exacerbates the impact zeros have on clarity.

“Validity is in question when the construct to be measured is not purely achievement but rather some mix of achievement and nonachievement factors.”

“Validity is in question when grades mean different things in different schools or subjects, in different teachers’ classes, and for different types of students.”

-S. Brookhart (2013)

**Validity and Reliability (Heritage, 2010)**

- **Validity** refers to whether an assessment is measuring what it is intended to measure ... and is related to a specific use of an assessment or the interpretation of the data.

- **Reliability** refers to how consistently an assessment measures what it is intended to measure. If a test is reliable, the results should be repeatable.
Four Types of Portfolios (Belgrad, 2013)

1. Learning Portfolio
   • Captures evidence of knowledge and skills to provide a holistic picture of learning/achievement over time.

2. Developmental Portfolio
   • Demonstrates the continuing growth and development as readers, writers, thinkers, etc.

3. Assessment Portfolio
   • Captures evidence of the achievement of benchmarks or standards; how is criteria met and plan for improvement.

4. Showcase Portfolio
   • Invites students to focus on, communicate, and celebrate individual achievements or talents

Benefits of Portfolios (Belgrad, 2013)

1. Reflection Process
   (+) Improvements in student engagement in self-monitoring.
   (-) Research is significantly thin, so claims must not be overstated; empirical evidence could be helpful.

2. Self-Assessment & Communication
   (+) Create regular and predictable opportunities for students to connect successes and failures to specific factors.
   (-) Research is also thin. Do portfolios and self-assessment affect goal-setting? Increased motivation & achievement?

“In order to ensure that next generation, 21st-century knowledge, dispositions, and abilities are included in K-12 curriculum and instruction, a holistic, systematic approach to collecting and reporting evidence of student achievement is needed.”

- Susan Belgrad (2013)
References


Areas of Focus for Day 3 Working Session

**Been there, done that!**

- Examine your current curricular standards to identify where 21st century skills are already an authentic part of the expected learning.
  
  o *How intentional and transparent are those learning goals?*
  o *Have you established criteria that makes it easier to identify strengths and what needs strengthening?*
  o *What revisions/edits could you make to enhance student awareness that critical 21st century competencies are being learned?*

**New and Improved!**

- Examine your current curricular standards to identify where 21st century skills could be naturally embedded into your current instructional routines (i.e. collaboration)
  
  o *How would this enhance your students development with the competencies?*
  o *How could you establish criteria and assess the competencies without disrupting too much of your instructional flow?*
  o *Are there some competencies that could be combined (i.e. collaborative problem-solving) to create a more enriched learning experience?*

**The Real-World!**

- Examine your use of performance assessments (PBL, Inquiry, etc.).
  
  o *Do your tasks elicit sophisticated, authentic evidence of learning?*
  o *Have you established task-neutral (learning focused) criteria that identifies the specifics of the learning that is meant to be demonstrated? Is your criteria presented in the format that matches your primary intentions?*
  o *What could you do to make self-monitoring a more ongoing, seamless experience for students?*

**Teach them How to Fish!**

- What is the consistency with which you create opportunities for students to be fully invested in their own learning through self- and peer assessment?
  
  o *Does your classroom culture support a norm of working together? If not, what could you do to mitigate that concern?*
  o *How intentionally do you teach students the self-and peer assessment process (i.e. making inferences, constructive feedback)? What enhancements could you make to increase consistency?*
  o *What types of tools and processes could you use/create/implement that would allow you to use self- and peer assessment to teach students to be more self-directed and self-regulatory?*