

Perpich Center for Arts Education Arts High School, 2014-2016

Abstract

Minnesota's state arts high school, the Arts High School (AHS) at the Perpich Center for Arts Education, opened its doors 26 years ago. Throughout that time, AHS students have entered with various levels of preparation, both within the arts and the academic subject areas. Perhaps this is to be expected because the students come from all parts of a large state, and no state offers uniform educational opportunities. AHS teacher's postulate, though, that due to the last two decades of high stakes standardized testing mandated by federal legislation known as No Child Left Behind and Race to the Top, a majority of students now enter AHS with narrower curricular experiences under their belts than was true earlier in the school's history. There is conjecture that over time fewer learning opportunities inclusive of the arts have existed in Minnesota and elsewhere because schooling has focused during this period on testable subjects. Furthermore, concerning high stakes testing generally, AHS has always been an outlier.

Because it is a school serving only 11th and 12th grade students, the data from standardized testing has always been sparse. The ACT administered in grade 11 remains the only standardized test that all AHS students take during their matriculation. They may also take the Minnesota Comprehensive Assessment (MCA) in mathematics in grade 11, but many families opt out of that test, citing over-testing. For AHS, the challenge remains to determine whether students are learning to high standards using measures that teachers create themselves.

After three years, influenced by the state mandated teacher evaluation process and the high school's accreditation process, faculty members are now committed and are in the process of developing an assessment plan that incorporates the evaluation of critical and creative thinking development as an umbrella for a cross curricular evaluation and reporting process. They have begun learning methods for the formative assessment of thinking in a variety of ways, such as within student assignments, in testing, and in project development and evaluation, and are exploring how these methods will improve outcomes on summative assessments.

CASE STORY: What Happened After the Minnesota Teacher Evaluation Model Pilot?

During the 2013-14 school year, the 2-year Arts High School (AHS) program at the Perpich Center for Arts Education, a state agency, joined a small group of Minnesota schools to pilot a legislatively mandated teacher evaluation program, known here as the Model, slated for statewide implementation the following year. What happened during the Model Pilot at the Perpich Arts High School is contained in a case story entitled *2013-14 Minnesota Teacher Evaluation Pilot: Perpich Center for Arts Education Arts High School* ([link](#)).

In the two school years that followed, the Arts High School continued using the Model. Any teacher evaluation model that meets the requirements of state statute could have been used, but the Pilot year convinced the school that the state Model, with its emphasis on peers supporting peers towards continuous progress, was a good match. According to the Minnesota Department of Education (MDE), the Model is intended to be both an example of best practice in the field and a tool to improve the professional practice of Minnesota teachers. It establishes a three-year professional review cycle that includes a yearly individual growth and development plan, a plan to improve student learning, peer review, and observations of each teacher by a qualified and trained evaluator. Every third year, the teacher is observed numerous times and scored using the Model's rubric. The rubric for teacher improvement is based on *Minnesota Standards of Effective Practice for Teachers* in MN Rule 8710.2000. The school principal and instructional leaders are expected to coordinate staff development activities to support the evaluation process and outcomes. Both individual teachers and the school as a whole also must collect and use longitudinal data on student engagement and other learning measures aligned with curriculum. This data informs decisions made at the school level to improve student learning.

Throughout the Model evaluation cycle, all teachers work to improve their practice and student outcomes. The evaluation process collects evidence on three categories of indicators:

1. Teacher Practice

Teachers demonstrate proficiency and growth in four domains—planning and instruction (these include assessment), classroom environment, and professionalism using the *Minnesota Performance Standards for Teacher Practice* and each domain's associated indicators and elements.

2. Student Engagement

The school uses surveys and other data to examine students' commitment to and involvement in learning, which includes academic, behavioral, cognitive, and affective components. Within the classroom, teachers are expected to influence student engagement through their relationships with students and the relevance and rigor of their instruction.

3. Student Learning and Achievement

The school is asked to track student outcomes as measured by the assessments that have the highest levels of confidence and commonality.

During the Pilot year and the two years afterward the twenty-five full and part time teachers at AHS have used the structure of the teacher evaluation Model to specifically address areas that they and their evaluators have earmarked for growth. These include recommendations that resulted from the school's accreditation process conducted by AdvancED during 2013-14. In May 2014, the same month the first group of ten teachers received their teacher evaluation scores and all teachers reported on their progress on the elements of the process, the entire school also received its accreditation. The school received passing scores on all accreditation standards and four required actions for improvement where mandated to be addressed between 2014 and 2019 when the next accreditation will take place

Three of the four required actions for subsequent accreditation are related to establishing and maintaining a clearly defined and

comprehensive student assessment system. AHS is required to 1) establish and implement a clearly defined and comprehensive student assessment system that includes multiple measures of student learning, 2) provide training for all staff in the analysis and use of data, and 3) establish a continuous method to determine verifiable improvement in student learning and readiness for success at the college or career level, either through a school-identified student assessment tool, or data collected in regard to formative and summative classroom assessments. The Model also contains these standards. During the Pilot year teachers had uncovered room for growth in these same areas. With both evaluation tools pointing toward improving assessment at AHS, the faculty, principal, and the professional development leader began to design professional development activities for the following year to address both the teacher evaluation and the accrediting agency's concerns.

2014-2015 Work Plan

The faculty, led by Principal Antwan Harris and professional development consultant Mary Jo Thompson, began 2014 with the goal of working over the next two years to develop a school-wide plan that addressed concerns raised in the accreditation report. Concurrently, each teacher continued to work on his or her own Individual Growth And Development and Student Learning Goal projects; they were encouraged to align their individual work with the school-wide effort. The 2014-15 work plan nested faculty members' individual work within the work of the school as a whole. Each individual teacher took the role of researcher and developer of assessment practices that were subsequently shared and refined with their colleagues in Professional Learning Communities (PLC) and eventually faculty wide.

The first order of business was to come to consensus as a school as to what were to be the publicly shared outcomes desired for each Perpich Arts High School graduate. During August and September 2014, members identified competencies that described their goals for Perpich graduates. The competencies synthesized findings from interviews that teachers conducted with past graduates and from structured faculty reflections centered on the question: *What is Perpichness? What do we dream for our graduates? What describes the competencies we wish to build during the students' two years at Perpich Arts High School?* These findings were compared to the P21's Framework for 21st Century Learningⁱ commonly called 21st Century Skills, as well as to American national standards in each discipline. They were subsequently revised for a stronger alignment to both. By December, faculty members had worked through a synthesizing process and arrived at the following four areas of competence along with the descriptors that elaborated skill areas within each. These were nested inside an overall goal that its students remain life-long learners.

DESIRED OUTCOME: Through rigorous work in both artistic and academic disciplines, the Perpich student develops competencies that prepare him or her for a creative life.

- I. **Creative Practice:** maker of art, innovator, resource savvy, risk taker, keen observer, reflective practitioner
- II. **Relational Practice:** empathetic collaborator, articulate communicator across and within a variety of disciplines, engaged

citizen, culturally competent, understands art world

III. **Individual Practice:** self-knowledgeable, self-advocating, productive and accountable, tenacious and self-directed, devoted to improving knowledge and craft

IV. **Thinking Practice and Habits of Mind:** fluent critical and creative thinker, disciplinary thinker, connection maker, problem framer and solver, generative questioner, decision maker and forward planner

Elaborated Competencies

I. Creative Practice

Innovator

- Developing, implementing, and communicating new ideas to others
- Acting on creative ideas to make a tangible and useful contribution to the domain in which innovation occurs
- Generating original and adaptive solutions to real life concerns
- Producing ideas and knowledge, not merely consuming them
- Envisioning, picturing mentally what cannot be directly observed, heard, or written and to imagine possible next steps in making a piece.

Resource Savvy

- Accessing information efficiently and effectively, evaluating information critically and competently, and using information accurately and creatively for the issue or problem at hand
- Possessing a fundamental understanding of the ethical/legal issues surrounding the access and use of information
- Using technology as a tool to research, organize, evaluate, and communicate information and the possession of a fundamental understanding of the ethical/legal issues surrounding the access and use of information

Risk taker

- Reaching beyond one's supposed limitations, to explore playfully without a preconceived plan, and to embrace the opportunity to learn from mistakes and accidents.

Keen Observer

- Attending to visual, audible and written contexts more closely than ordinary "looking" requires; learning to notice things that otherwise might not be noticed.

Reflective Artist

- Learning to think and talk with others about one's work and the process of making it. Learning to judge one's own and others' work and processes in relation to the standards of the field.

II. Relational Practice

Empathic collaborator

- Working appropriately and productively with others
- Collaborating with people of diverse perspectives and experiences with empathy
- Leveraging the collective intelligence of groups

- Assuming shared responsibility for collaborative work
- Articulate communicator across and within a variety of disciplines
- Communicating in a variety of contexts through a variety of artistic media, including technologies, to convey their own ideas and to interpret the ideas of others.
- Articulating thoughts and ideas clearly and effectively through speaking, writing, media, visual art, music, theater, dance
- Using digital technology, communication tools, and/or networks appropriately to access, manage, integrate, evaluate, and create information in order to function in a knowledge economy
- Examining how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors

Engaged citizen

- Applying the mindset and work habits of an artist to engage globally, socially, and civically within a broader community
- Using interpersonal and problem-solving skills to influence and guide others toward a goal
- Leveraging strengths of others to accomplish a common goal
- Demonstrating integrity and ethical behavior
- Acting responsibly with the interests of the larger community in mind

Culturally Competent

- Bridging cultural differences and using differing perspectives to increase innovation and the quality of work

Understands Art World

- Learning about the history and practice of the art form; interacting with other artists and broader arts community.

III. Individual Artistic Practice (Self-Assessment)

Self-Knowledge/Self Advocacy

- Monitoring and advocating for one's own understanding and learning needs
- Productive and accountable
- Utilizing time efficiently and managing workload
- Defining, prioritizing, and completing tasks without direct oversight
- Setting and meeting appropriate standards and goals for delivering high-quality work on time
- Demonstrating diligence and a positive work ethic (e.g., being punctual and reliable)

Tenacious and Self-directed

- Engaging and persisting by taking up subjects of personal interest and importance within the art world.
- Learning to develop focus and other ways of thinking helpful to working and persevering at art tasks.
- Seeing failure as opportunity to learn and not an ending

Practicing to improve knowledge and craft

- Learning to use tools and materials.
- Learning the practices of an art form.

- Going beyond basic mastery of skills and/ or curriculum to explore and expand one’s own learning and opportunities to gain expertise
- Demonstrating initiative to advance skill levels toward a professional level

IV. Thinking Practice and Habits of Mind

Fluent critical and creative thinker

- Exercising sound reasoning in understanding
- Adapting to varied roles and responsibilities
- Working effectively in a climate of ambiguity and changing priorities

Disciplinary thinker

- Applying discipline based thinking, for example, thinking like an artist, musician, composer, photographer, historian, scientist, writer, etc.

Connection maker

- Understanding the interconnections among systems

Problem Framer and Solver

- Framing, analyzing and synthesizing information in order to solve problems and answer questions

Generative Questioner

- Identifying and asking significant questions that clarify various points of view and lead to better solutions

Decision Maker and Forward Planner

- Making complex choices and decisions

Spring 2015: Curriculum Mapping Faculty members, using a mapping framework, next described their courses in terms of how each of the four competency categories was weighted within them; this data was collected and analyzed by the faculty. The preliminary mapping helped the teachers apply the competency structure as an analysis tool and introduced the practice of curriculum mapping to the teachers for the first time. (See Appendix A.)

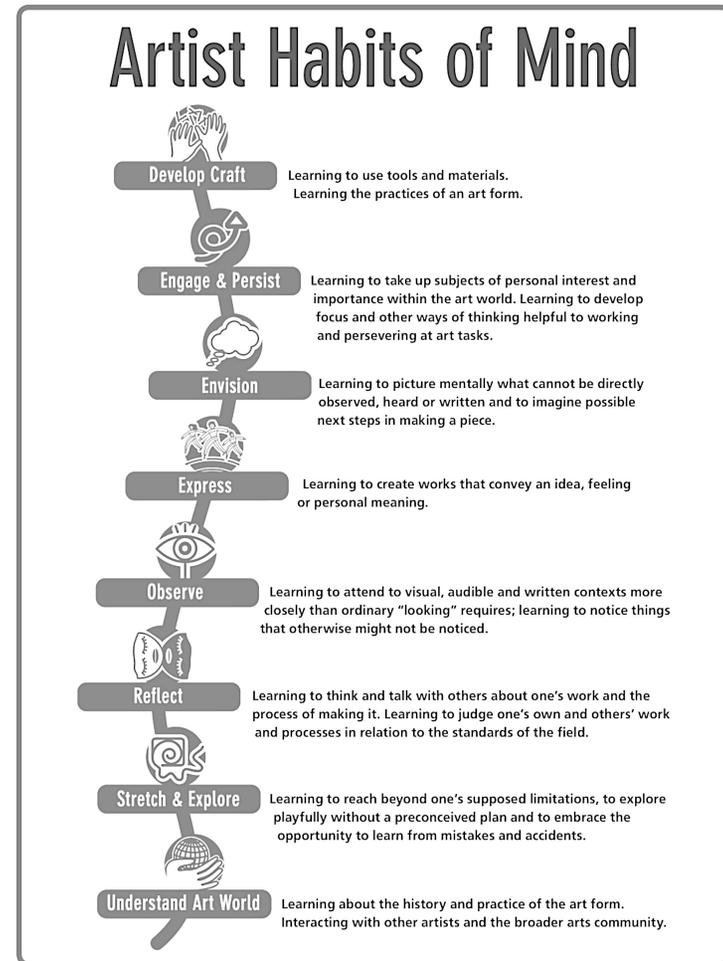
It also led to a decision to focus on the fourth competency area, **Thinking Practices and Habits of Mind**, during professional learning sessions during the 2015-16 school year. The assumption was that sharing a common set of methodologies would help teachers develop shared competency-based assessments. All agreed to read *Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners*, by Ron Ritchart, and practice implementing thinking routines and practices from that approach.ⁱⁱ

Visible Thinking is a research-based methodology for learning about thinking begun at Harvard's Project Zero. According to the researchers, it develops “students' thinking dispositions, while at the same time deepening their understanding of the topics they study. Rather than a set of fixed lessons, *Visible Thinking* is a varied collection of practices, including thinking routines; small sets of questions or a short sequence of steps; as well as the documentation of student thinking.”ⁱⁱⁱ

Using this process, thinking can be assessed as students' ideas are expressed, documented, discussed, and reflected upon, orally, in writing, and within the expressive language of an art form. The plan, as faculty members looked to the continuation of this work, was to supplement *Visible Thinking* with elements from an arts specific approach to reflection described in *Studio Habits of Mind*, by Lois Hetland and Ellen Winner^{iv}, and to consider constructing assessments of thinking derived from specific real world discipline-based perspectives, such as thinking like an historian, writer, mathematician, scientist, conductor, performer, composer, etc.

Faculty members asked themselves to what extent critical thinking/creative thinking was being developed and modeled in the classroom environment. Using faculty and student surveys, they determined gaps. (Appendix B) They agreed to embed critical and creative thinking more explicitly into the classroom culture, to promote critical thinking within curriculum and instruction, and to focus on how it can be used in school, everyday life, and issues important to the community.

The goal was to include dimensions of critical and creative thinking within assignments, such as evaluating real-world materials from the subject matter and to develop and/or use formative, curriculum-based assessments of critical thinking. The vision continues to be to work more regularly to assess student's growth and report the results to parents. Efforts are being made to embed critical and creative thinking within the underlying culture of the school and make sure learning spaces encourage thinking; determine how well overall school environment encourages thinking and take steps to address gaps; develop common vision, plan and strategy for incorporating critical and creative thinking into teaching and learning; build faculty members' capacity and support innovative teaching practices, such as selecting key components of critical thinking (e.g., logic, recognizing manipulation, evaluating sources, evaluating artistic products) to emphasize school-wide.



2014-15 Recap

1 We began this year with the goal of establishing systematic, school-wide assessment criteria to address concerns addressed in our accreditation report.

2 We generated a list of what Perpich graduates would be at the end of their time here.

3 We synthesized our list into four main competencies.

Is analytical	Is a productive citizen in the community, gainfully employed
Is entrepreneurial	Art a voice for expression and connection
Is intellectually skillful	Believes in themselves
Is organized enough to run own life	They can make a difference
Is practical, and a risk-taker	Can write a proper English sentence
Is ready to move into a new art community (gallery, studio, community of practicing artists)	Can work for the welfare of others, respects others
Keeps a balance between art and life	Can maintain healthy relationships
Keeps a sense of their social impact	Can communicate in meaningful ways
Keeps moving toward global competency	Can stand up for the world, its promise and its issues
Keeps passion alive	Can persevere in the face of change
Knows and can discuss what makes an artist an artist	Can choose to define self from the positive
Knows context and history	Can choose to use artistic habits of mind
Knows how to make connections	Can be a competent leader
Knows how to persevere with things that are difficult	Can demonstrate leadership
Knows how to promote self as an artist	Can demonstrate 21st century skills
	Can demonstrate creative and critical thinking skills
	Can listen and trusts inner voice to guide live

The Perpich Competencies

Through rigorous work in both artistic and academic disciplines, the Perpich student develops competencies that prepare them for a creative life.

Creative Practice

- Maker of art
- Innovator
- Resource savvy
- Risk taker
- Keen observer
- Reflective practitioner

Relational Practice

- Empathetic collaborator
- Articulate communicator across and within a variety of disciplines
 - Engaged citizen
- Culturally competent
- Understands art world

Student as life-long learner

Thinking Practice and Habits of Mind

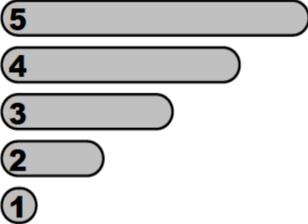
- Fluent critical and creative thinker
- Disciplinary thinker
- Connection maker
- Problem framer and solver
- Generative questioner
- Decision maker and forward planner

Individual Practice

- Self knowledgeable
 - Self advocating
- Productive and accountable
- Tenacious and self directed
 - Devoted to improving knowledge and craft

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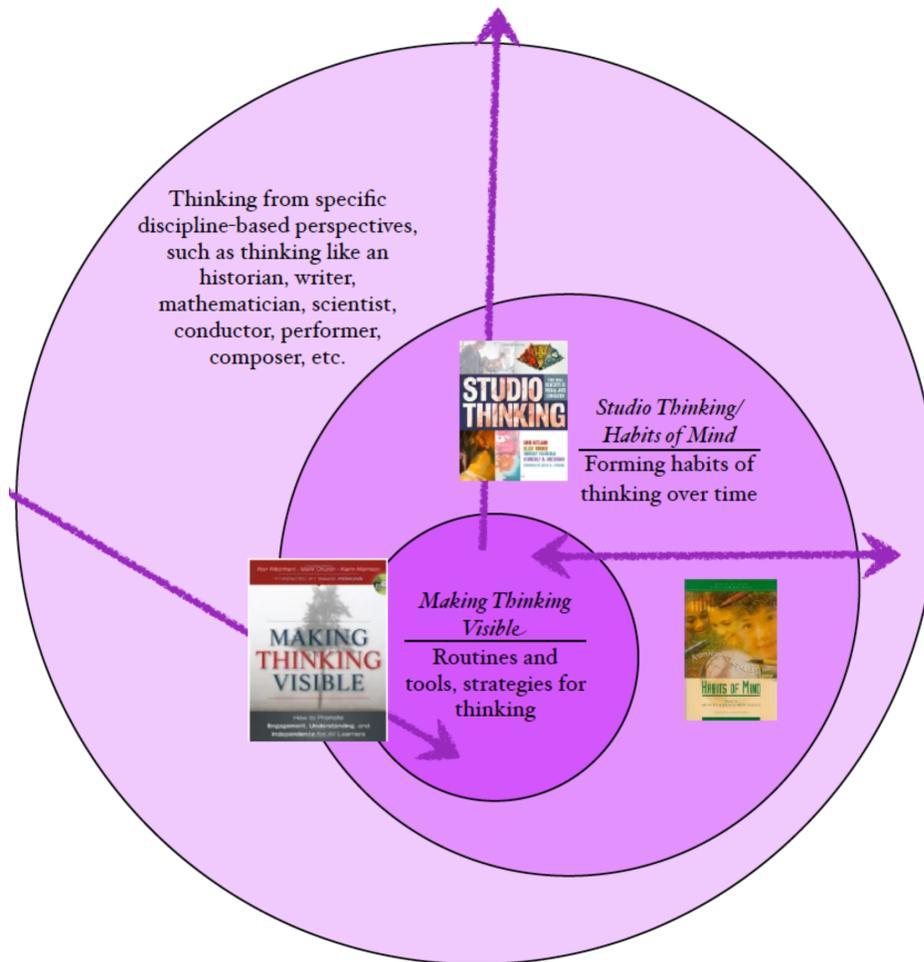
We described our classes and weighted the focus of the four competencies in each class.

Dance	Performance	Technique	Composition
<p>Relative weight of competencies covered in each class, intended to show a general emphasis rather than an exact percentage.</p>  <p>5 4 3 2 1</p>	<p>Replicating, interpreting and refining movement for solo, small group and large ensemble dances.</p> <p>Collaborating with ensemble members and others. Developing performance presence in a wide variety of settings. Demonstrating rehearsal and performance etiquette. Analyzing rehearsal process, choreography and individual weaknesses and strengths in relation to a particular performance. Collaborating with other dancers and theater artists to compose the performance. , making decisions. Reflecting on process and writing artist statement as both choreographer and dancer. justify artistic choices with relationship to intent.</p>	<p>Study of various genres and styles demonstrating the ability to replicate movement with accuracy, musicality, spatial clarity, appropriate dynamics, coordination, strength, and stage presence.</p> <p>Fluency of physical and dance vocabulary Analyze personal movement preferences Set goals for improvement Dance alone and in an ensemble Analyze and replicate specific styles of dance Dance with a sense of solo, partnering or ensemble Justify choices</p>	<p>Projects and classes focusing on craft of composition, including vision, virtuosity, voice, and vision.</p> <p>Creating solo and ensemble dance compositions based on a variety of sources Developing craft of musical composition Analyzing and planning dance elements or intended impact and audience Revising for intention Justifying choices for intention</p>
Creative Practice			
Relational Practice			
Individual Practice			
Thinking Practice and Habits of Mind			

Looking ahead to 2015-16

5

Looking ahead to our next year, we decided to begin to develop curriculum and shared assessments within Thinking Practice and Habits of Mind of Mind.



Thinking Practice and Habits of Mind

- Fluent critical and creative thinker
- Disciplinary thinker
- Connection maker
- Problem framer and solver
- Generative questioner
- Decision maker and forward planner

2015-2016

In the fall of 2015, each teacher rewrote the syllabus for each of their courses to align with the newly described competences; learning goals were reframed using six facets of understanding outlined in Understanding by Design (UbD)^v and course assessments further aligned the competencies. *See Appendix B for example.*

SIX FACETS OF UNDERSTANDING

Six Facets	Description	Example
Explanation	To ensure students understand why an answer or approach is the right one. Students explain or justify their responses or justify their course of action.	Students develop an illustrated brochure to explain the principles and practices of a particular type of technology (i.e., transportation, construction, medical, information).
Interpretation	To ensure students avoid the pitfall of looking for the "right answer" and demand answers that are principled...students are able to encompass as many salient facts and points of view as possible.	Students develop a 'biography' of the development of a particular type of technology.
Application	To ensure students' key performances are conscious and explicit reflection, self-assessment, and self-adjustment, with reasoning made evident. Authentic assessment requires a real or simulated audience, purpose, setting, and options for personalizing the work, realistic constraints, and "background noise."	Students analyze a design of a product, taking it apart in order to determine how it works. Students design, develop, test, and revise a solution to a local issue, such as a new roadway system, a water treatment system, or long-term storage of various materials.
Perspective	To ensure students know the importance or significance of an idea and to grasp its importance or unimportance. Encourage students to step back and ask, "What of it?" "Of what value is this knowledge?" "How important is this idea?" "What does this idea enable us to do that is important?"	Students investigate about a technological artifact from the perspective of different regions and countries.
Empathy	To ensure students develop the ability to see the world from different viewpoints in order to understand the diversity of thought and feeling in the world.	Students imagine they are politicians debating the value of nuclear power. They write their thoughts and feelings explaining why they agree or disagree with the use of nuclear power.
Self-Knowledge	To ensure students are deeply aware of the boundaries of their own and others' understanding; able to recognize their own prejudices and projections; has integrity – able and willing to act on what one understands	Students reflect on their own progress of understanding about one of the standards in Standards for Technological Literacy: Content for the Study of Technology . They evaluate the extent to which they have improved, what task or assignment was the most challenging and why, and which project or product of work they are most proud of and why.

Source: Wiggins, G., & McTighe, J. (1998). [Understanding by Design](#). p. 85-97. Alexandria, VA: Association for Supervision and Curriculum Development.

The faculty decision to develop a shared competency based framework with shared assessments was now reflected in the 2015-16 work plan. Each teacher would read the common text, *Making Thinking Visible* by Ritchart, Church, and Morrison^{vi}, implement strategies germane to their courses, and share learning results within and across five or more PLC meetings during the school year. This work would serve as research and development for eventually building an assessment system for evaluating student thinking proficiencies across all disciplines offered during the two year Arts High School experience.

Since the accreditation results had been received, training for all faculty members in the analysis and use of data had been ongoing, led by the professional development consultant. The training occurred during monthly professional development sessions. Survey data, test data, observational data, and anecdotal data were collected and analyzed at various sessions to make informed decisions on actions that need to be taken. The most recent occasion led to a decision to create common experiences for students in 2016-17. These will occur as part of an advisory structure and will bring back former graduates to help students to see the connections between their school experiences and the worlds of college and work for artists. A separate commitment has also been made by the school to structure time for extra learning sessions for students who in danger of not meeting the proficiency standards in thinking that the school is developing.

AHS teachers continue conversations around how to move the culture of the school from teaching content to teaching *how to think and learn* inside the content. This involves staying focused on what is being learned instead of merely what is being taught. A change to a culture of thinking, they believe, will result in changes to the emphasis within course content, the role of the teacher, who is responsible for learning, the purpose and process of evaluation, and the types of products and evidence of learning being produced and evaluated.

The school has adopted a work plan for 2016-17 that will focus faculty members' on producing common assessments on two competency areas and to collect evidence of learning known as data. They will analyze the data to make program and instructional changes based test results on the ACT Writing strand and the Minnesota Comprehensive Assessment in Mathematics in addition to student work samples in writing, presentation, and self and peer assessment.

Common Assessment Strands

Writing is thinking on paper. Speaking is thinking crafted for oral presentation. William Zinsser

1. Assess Thinking through Written and Oral Communication: Writing/Speaking = thinking

Action Steps

- Analyze ACT Test Data on Writing; create an action plan for moving students to proficiency by graduation by increasing the explicit teaching of various writing forms and process and providing additional support to students who need it.
- Select and write rubrics for selected kinds of writing and presentation.
- Further develop “Artist Statement” unit piloted by Media teachers. (See Appendix C)
- Further develop “Learning Presentation” unit piloted by Visual Art teachers. (See Appendix D)
- Learn protocols for looking at student work and for developing rubrics and exemplars; proceed to develop and/or adopt suitable methods.

2. **Create a shared practice of Constructive Feedback/Critique** using the self-assessment, peer assessment, project assessment, and exhibition assessment methods developed by the Students at the Center project. ^{vii}

Action Steps

- Critique is foundational to all four areas of competence that AHS students are working toward; define norms across the school for kinds, values, concerns, and language of critique. Design the means to collect and regularly analyze evidence of learning through critique.
- Learn the methods of the Students at the Center (SATC) Self, Peer, Project Assessment process <http://www.studentsatthecenter.org/resources/student-centered-assessment-resources>
- Further develop disciplinary thinking project “Think Like A Musician” piloted by the Music Department. (Appendix E)

Next steps 2016-17

For the common assessments, which will occur in the context of classroom work, faculty members will apply common standards for both formative and summative project-based learning assessments in several arts and academic disciplines. The criteria for project-based assessments include that the Intellectual activities within them lead to deep understanding. These project based units and their assessments will be evaluated according to the following indicators from *Visible Thinking*:^{viii}

1. Novel Application: Asks student to apply, organize, interpret, evaluate, or synthesize prior knowledge to solve a novel problem or form new judgments.

2. Meaningful Inquiry:

Learners develop new understandings and insights that go beyond the obvious and extend their current understanding.

3. Effective Communication: Learners express, represent, justify, support, and communicate their ideas, understandings, methods, and processes effectively using disciplinary tools, symbols & language.

4. Purposeful Reach: Learners produce discourse, products, and performances that have value beyond the classroom. Efforts have utilitarian, aesthetic, or personal meaning & connect learning to the larger world.

Lessons learned

During discussions over the last two years, AHS teachers have tried to delineate when and how they assess for the mastery of content and whether that always leads to deep understanding, that is, learning that is transferable. A majority of the faculty now actively and explicitly teach thinking methods that lead to deep understanding than previously, according to their own assessment. Teaching thinking and creating a culture of thinking is seen as possible and desirable by nearly all. AHS teachers have come to believe that they must describe clear expectations for thinking to their students if they are to see all of them grow, and that they themselves must prioritize the demystification of thinking in the context of disciplinary learning.

Their work has also tried to address a constraint that is common in secondary education. As content specialists, they know their students primarily within their own single disciplinary context. While they focus on student learning in each of their own classes, because there are students who fail at AHS, the staff and teachers recognize the need to gather and analyze evidence of learning across the entire school so that every student experiences coherent expectations and success. They now espouse a firm belief that critical and creative thinking are crucially necessary for success in higher education and the workplace and therefore should be the first focus of creating the AHS assessment framework. To this end, the AHS faculty has pursued ways to increase students' abilities to reason critically and to produce creative work while they have simultaneously endeavored to locate ways to authentically measure such learning and to do so systematically.

A structure for responding to the comprehensive experience of AHS students is being designed. It feels like difficult work, but for two years the teachers have willingly, as an entire faculty team, explored ideas of improving student learning through a more integrated conceptual framework of attributes desired and a growing practice of shared analysis of student learning artifacts. In doing so, each of them has agreed to work as researchers and developers, implementing new practices that support critical and creative thinking, and shared their results with their colleagues. The 2015-16 Recap chart reflects some of their recent work with students to create a culture of thinking, practice critique, and write and present thinking in oral presentation.

2015-16 Recap

Art	
<p>Examples to the right are specific to painting and advanced drawing classes and they are strategies we utilize across Visual Arts.</p>	<p>1. Thinking Routines from Making Thinking Visible: Presentation! It's Show Time; How to Present Your Work Students practice presentations, video presentations, written artists' statements, critiques. Artist presents his or her own work as if in a museum. Student stands in front of Senior Retro and present; presentation is recorded on video.</p> <p>2. For critique, students learn and implement 4-step critique protocol that is used in art colleges and university programs. The 4 steps in critiquing: Describe; Analyze; Interpret; Evaluation/Judgment Students come to Perpich and do not know how to look at or talk about art works in a constructive manner. Many of them sit silently. They do not have the language to critique and by reviewing the 4-step critique protocol, they tend to speak up and engage! We utilize a variety of formats both individual and group and we change it up where students talk about someone else's work or they talk about their own. (Students are sometimes asked to select a work that resonates with them.) The critiques vary from in-progress to finalized work.</p> <p>3. Written and Oral Communication: Writing/Presentation Presenting Work is an opportunity for students to articulate their concepts, methods, material choices, scale of a work. Critiquing and presenting are essential bookends to help students gain confidence in their articulating their creative practice and standing with their work. Students are asked to write their reflections post painting. They briefly articulate why they selected the subject matter, scale, materials and the meaning or content of the work. They also address the artist's intent. Our Perpich Gallery Curriculum is where students do all aspects of an exhibition from start to finish intensely focuses on the artist statement.</p> <p>Presentation of Work is of major importance for students. Students learn and practice different presentation styles from informal, conversational, and formal. Their final presentation is video recorded. Professional art practice demands communication both visually, orally and digitally. Part of their presentation focus is when they present their work and they know that every "um, "and a," "like," "sort of," "you know," is tallied! We do this in a playful spirit of seeing what our nervous speaking habits are. Often students are really surprised by the tallies!</p>
<p>Examples are specific to various printmaking & advanced printmaking courses but are strategies we utilize across Visual Arts.</p>	<p>1. Making Critique Visible through Quiet, Written, Contemplation: Students Silently Demystify Critique Critiques start with silent writing. Each student looks at the artwork and begins describing without judgment and identifying component parts. We use the Visible Thinking routines See, Think, Wonder; Zoom In; and a variation of Chalk Talk. Student prints are laid out at stations throughout the studio and a number of tables. Along with the artwork, there are sheets of paper with the corresponding student's name and quick information about the formal categories of critique (which align with See, Think, Wonder. Students move around to each station and write to each of their peers using the Zoom In prompt. At the end, each student reviews the written comments on their work and writes a self-assessment for their project.</p> <p>2. Critiques: Constructive critique for peers For critique, we utilize a variety of formats both group based and individual. The critiques are sometimes for work that is in-progress but also for finalized work. In the very generalized world of visual arts education, critique structures are not always taught or at least are taught more purely by example. So I work more explicitly to spell out the types of critique, no matter what format we are working with. This starts with Description, Analysis, Interpretation and Judgment or Evaluation.</p> <p>3. Written Work</p>

	<p>Constructive critique for peers and for self-assessment is a constant with each project in my courses. The critique elements blend into some of the written work as students take part in formats of critique where they write about each other's work and their own. But ultimately via project statements, developing an artist statement for our exhibitions and beyond, my students write to communicate the ideas they are working with. They also orally present their work and the work of their peers during critiques.</p>
Media Arts:	
<p><i>These examples reference media arts courses. I utilize them in units and believe they could be utilized in all arts areas.</i></p>	<p>1. Thinking Routines Feedback in media arts is generated with the Critical Response: NOTICE, REMIND, EMOTIONS, WONDER and MEANING SPECULATION and the SEE, THINK, WONDER model from <i>Making Thinking Visible</i>. Critiques start at the in-process exploration. Students share work in rough form and receive feedback from peers and teacher. Students do this in both a written and oral manner. Some critiques include a written reflection utilizing protocol above and then follow up with an oral response. I collect the forms as a way to monitor student thinking and note growth of language and thinking skills.</p> <p>2. Critiques Critiques are both group based and individual. This process contains elements of critique and peer/self assessment that includes writing and presentation. This process occurs not just at the completion of a project but benefits students in an in progress manner. I have found students are much more open to feedback when their work is in a rough state than when it is in a complete form. This process also supports community through connecting students to their process.</p> <p>Students begin by DESCRIBING what they see. They are asked to use media arts language to describe the work. No judgment at his point. Then they SPECULATE what is going on and share any WONDERING around what the artists' intent it. Their speculations are intended to be connections between seeing, thinking and wondering. After peers speak and artist listens. Artist responds. The artist may answer questions as well as speak to intent and what they heard. A dialogue follows exploring intent of artist and how it may, or may not, match what the viewers' experience.</p> <p>3. Writing All students are required to write a project statement of their media works. This starts in their initial planning phase and develops through the creation. With teacher feedback, students work towards a final statement explaining their process and art form. This piece is often presented with the displayed artwork. And recently students have included a QR Code with audio of them describing their working process. This development of writing of individual works or bodies of work builds the skills, language and understanding of critical thinking needed to write and artist statement. This is something all media students must leave with having written.</p>

Creative Writing	
<p>1. Thinking Routines from <i>Making Thinking Visible</i> In my International Short Stories reading courses, we work with stories from Daniel Halpern's anthologies, <i>The Art of the Tale</i> and <i>The Art of the Story</i>. We read stories aloud in class, discuss them, and use the literary elements of point of view, setting, character development and theme as organizing principles for the discussion. We read the stories in cross-cultural sets of two and compare and contrast them in terms of the literary elements, seeking out cultural information as well. The discussions are always energetic and fun and I am able to watch student growth and learning happen before my very eyes and ears. However, there are always students who speak less (despite my attempts to gently draw them out) and a writing component proves necessary so that I can assess the learning of the quieter students. Since the course is a reading course, NOT a writing course, I have turned to using what <i>Making Thinking Visible</i> calls "Concept Maps." Periodically I will ask students to draw Venn diagrams or the "Box and T" in order to show me their ability to compare and contrast the</p>	

stories in terms of the literary elements taught in class. These have been an excellent way for me to tell, at a glance, whether students have followed or improved upon what was discussed. It also allows students to see their own thinking, laid out, on paper.

2. Critique We have the luxury of waiting to do critique in Junior Year Literary Arts. Since we meet for three hours a day, five days a week, I am able to allow students to develop a safe writing community first before they are asked to give or receive critique of any kind. I give them simple prompts daily, we write together quietly, and we read aloud to each other, no commentary permitted. The prompts elicit memories and personal stories so the students (and I) get to know each other in the process. After two or three weeks of this I help students develop their in-class writing beginnings into finished work, but even then the only critique they initially get is from me. Depending on how long it takes the group to develop a culture that feels safe and accepting, peer critique (or “workshop”) will begin after two to three months of in-class writing. Because the class is usually so small (14 students this year), we are able to work together as a full group for at least the first set of work-shopping and I am able to facilitate at all times, setting precedent. Because our class period is so long, we can usually workshop 3-4 students’ pieces a day, finishing a set in one week.

Prior to the actual workshop session, students receive copies (paper or Google Doc) of each other’s writings and write commentary in advance, keeping in mind a set of expectations (i.e. the rubric) that focuses on what we have covered thus far in class. In the earliest workshops, a priority is placed on sensory detail, physical description of objects and place, and the use of metaphor. The list of expectations grows as the year continues.

During each session, a specific protocol is used. The author reads her/his piece aloud to the group and is expected to listen quietly until the final discussion stage. First off, we do a “Compliment Round” during which each student takes turns expressing verbally what they thought was strongest about the piece of writing. Secondly, again in a round, students express verbally what they think is their most important discussion. After everyone has expressed one compliment and one suggestion, discussion ensues. Opposing views can be expressed, questions are asked and the author can provide clarification. At the end of the session, the written comments are given to the author (after I’ve checked them in). The digital sharing of Google Docs is making this process much more efficient.

I use this method of work-shopping at least four or five times a year, especially prior to our public readings, and it’s a pleasure to observe over time the very evident growth in students’ abilities to successfully provide critique. The work-shopper’s process of isolating a specific problem in a piece of writing, identifying effective ways to address it, and delivering that suggestion with sensitivity is a very sophisticated process. The author’s process of effectively using such suggestions in revision requires a sense of security and a strong desire to learn and improve one’s writing. Having the opportunity to watch their peers in workshop adds to the intense learning and growth that occurs. By the latter part of the year, my own presence in workshop sessions is largely observational too.

When the second drafts of the research-based, character-driven short stories are ready to be work-shopped in April, it becomes necessary to use smaller groups and it is then that students become independent work-shoppers. This year, my students are divided into three groups and are spending one entire class session on each story. By this point the expectations for critique have increased significantly and I require work-shoppers to incorporate the following questions into the work-shopping process:

- Story opening – Is it engaging? Does the first line drop you into the heat of the action or present an intriguing situation that makes you want to continue reading?
- Point of View – Whose point of view are we in? Do the story details make sense in terms of POV – in other words, if the story is in first person are we properly limited to knowing only what the narrator can know?
- Show/Don’t Tell – Is there plenty of concrete detail in the story? Do you have a sensory experience while reading - can you see, hear, touch, smell, maybe even taste what the characters in the story are experiencing? Has the author chosen to “show” rather than tell when possible?
- Exposition – When important information about the background of a character or the context of a situation needs to be explained, is the information shared in a way that blends into the story and does not feel out of place? Is it functional and natural?
- Place – Do you know where the story takes place and are you given enough description to see or imagine what it’s like? Are there times when you might

not need to know so much detail? Has a good balance been found?

- Meaningful Details/Metaphor – Are there any objects or place details that symbolize something significant about the characters or themes of the story? Do the metaphors reappear? Should they?
- Character Development – Do the characters feel real? Are you given enough information that you can see or imagine how they look and act? Do their actions, dialogue and personal choices match up to who they are? Most importantly, does the main character experience significant change by story's end? Do you think the change feels real?
- Character Driven Plot – Does the series of events that make up the plot of the story make sense? Does the plot make sense in terms of who the characters are - or do the characters seem to be simply along for the ride? Does the plot end in a way that shows us something important about the characters and their development?
- Dialogue – Does the character's dialogue have a purpose? What does it show us about the characters and their relationships? Does it sound realistic and is it engaging?
- Action – Do the characters do stuff??? Is it stuff that shows us who they are and what their relationships are like?
- Themes – What are the main themes of the story? Has the author communicated those themes clearly?
- Conflict and Story Climax – Is there a moment when the story reaches a peak level of conflict, be it physical or psychological? How is that conflict resolved? If it's not resolved, do you think it should be? If there is no climax, why not? Should there be one?
- Resolution - Does the story's ending leave us wondering or is it a clear resolution? Do you want to know more? Should you know more? Or is it good to wonder?

Following these workshops, a third draft is due (which I critique), followed by a final draft due the last week of school. Literary Arts juniors learn to see critique as a positive way to problem solve and improve their own work and the work of others. They see it as part of the writing process, not as a negative, judgmental "correction." The majority of them also learn to prefer work shopping to almost everything else we do. Who knew that critique could be so much fun?

3. Substantive Writing Project After asking my Junior Lit students to write about themselves all of first semester, I require them to start thinking about the stories of other people over winter break. I ask them to choose one country or culture that they find compelling enough to study for the second half of the school year. The country (like all countries) must be involved in at least one identifiable conflict, be it physical or cultural. The students are then asked to research that country in various stages, beginning with history and ending with a focus upon the identified conflict. Concurrently, students begin to write fictionalized "backstories" based upon people in their own lives or about whom they have strong feelings. Students then develop a handful of fictional characters that will "audition" for parts in the upcoming research-based, character-driven short stories in a series of daily writing exercises. Bit by bit, and with great attention paid to the pitfalls of cultural appropriation, students write multiple drafts of stories that allow them to see, through their own stories, connections between cultures that they never expected. They also learn to work with character-driven versus plot-driven fiction. This story project has produced many award winning stories over the years, recognized mainly by YoungArts, the writing contest sponsored by the NFAA. I have been told that the winning stories are sophisticated and mature.

Math

1. Visible Thinking

Standard Deviation: Is the Explanation Game Closing the Achievement Gap?

Students use the Explanation Game to look at a problem or solution. The routine focuses first on identifying something interesting about an object or idea: "I notice that..." And then following that observation with the question: "Why is it that way?" or "Why did it happen that way?" Student questions and explanations become visible to the class as they are shared.

World Language French 4-5

1. Visible Thinking

“Claude” writes for advice about “Problèmes sentimentaux.” Student partners look at a modeled response using “**See, Think, Wonder.**” Peer feedback provides students with opportunities for deeper understanding as they then individually write a response to one of the letters. (This product will show evidence of learning.)

Learning Targets:

- Disciplinary Knowledge:
- Family, friendship, marriage, other relationship vocabulary
- Adverbs, subjunctive, reciprocal verbs, expressing feelings, additional past tenses (pluperfect)

Context /Purpose: what people do, more ways to express opinions.

2. Critique: I changed this as I felt that students hadn’t enough choice to make it motivating. We began by reading some model advice columns en French and used the “See, Think, Wonder” strategy. (French, Continued)

I then had students use Google Classroom to respond by giving short notes of advice to various letters. Then we did the **3-2-1 Bridge**-not exactly the way it was intended but it’s a great vocabulary review- on the subject “advice columnists.”

3 Writing: Since this was leading to a composition I wanted students to dig deeper and not just go for humor. The next part of the assignment was to write a letter with a partner after brainstorming and taking notes, asking for advice. **PRESENT TIME:** Students will exchange the letters and brainstorm responses using expressions of judgments that require the use of the subjunctive. In class, they will take on the role of the advice columnist and write a response to the letter they’ve received. We can use “connect-extend-challenge” and make it pertain to grammar formations required for expressing suggestions, possibilities, and opinions. This assignment /assessment will help me determine how well students can use the practical language of advice giving without the use of a computer for corrections and vocabulary. (It also prohibits use of translator programs.) I can also assess how long they can sustain language use, as that is a measurement of proficiency. After the writing, we will do the “Bridge” strategy again to see how their ideas on the topic of “advice column” had changed. **The critique and evaluation** of the composition is based on a rubric that includes both attention to grammar and comprehensible output through writing in fulfilling the task. Throughout the task, students will be discussing and/or working with partners up until they write their final composition letter. I will probably use: “I used to think, now I wonder...” after having completed the compositions. I’d like to address long-term learning: Did the advice giving help your understanding of when to use the subjunctive? And extend questions to; How hard is it to give advice? Why do people ask advice of unknown folks in newspapers? Is anonymous advice giving unique to western culture? Has social media eliminated the use of advice columns? Where do you go for advice? What is the worst advice you have ever received? Of course, these discussions will be in French!

World Language Spanish 3

1. I often use the routine **See Think Wonder** when we are looking at art. I have students use the target language. Even if they can’t produce a lot of language, it is still a great way for us to look at art with a critical eye.

2. Critique and 3. Writing

In Spanish III, students write and illustrate a 26 page children’s book. This is after we read other tales to show how the imperfect and preterit tenses are used when narrating stories. Throughout the writing process, students do peer editing as well as give each other feedback on the development of their idea. I believe it is a creative project, but it definitely has a purpose. The purpose is providing practice writing in the past tense in the development of a story. Students complete a self-assessment when they are done.

Science

1. Visible Thinking: Connect-Extend-Challenge = Meerkat Mind

When a new set of information is presented to a group of students, not every student absorbs the full set on the first pass. Some students “key in” to certain points of information and other students key in to other points. Despite this fragmentation of knowledge, the group as a whole absorbs the entire set of information. **Meerkat Mind** is a follow-up activity involving a structured, whole group discussion by which students share the specific information that resonated with them individually, so that eventually every person in the group ends up with the total set of pertinent points. The original presentation of information is for introducing the topic, setting context, and connecting the learning to real-world situations. As a follow-up, the goal of the Meerkat Mind activity is to streamline the information to the specific set of points that students could use for problem solving. The final step in the process involves having students choose a particular point of information from the original presentation that resonated strongly with them and reflect upon why that point stood out as so relevant. Students then share their reflections with the group. Talking about process leads to progress

I create flowcharts and as I’m explaining, I am thinking out loud. They are mostly conscious and I’m modeling until it becomes ingrained in them. In the next phase, they create the flow chart as a thinking map and they do the think aloud.

2. Critique: Self-reflection/self-assessment for building confidence in solving physics problems. Over the course of a semester, physics students generally become better problem solvers. Ironically, it is not their skills that improve so much as their confidence in their own ability solve problems. This situation presents a challenge for the physics instructor. The problem solving growth process evolves through a series of stages. When presented with new types of problems to solve at the beginning of the semester, most students don’t perform very well even though they have already mastered most of the necessary skills in their prior math classes. After a few weeks of practicing problem solving at the novice level, most students have experienced enough success and have become familiar enough with the strategies that their confidence level noticeably improves. This is crucial because the material becomes increasingly complex over the course of the semester, and at a certain point, confidence level becomes a key determinant of the degree to which students will remain engaged. This point in time is subjective and different for each class, but when the instructor has a sense that it is appropriate the students are asked to reflect upon and assess the degree to which they feel their problem solving skills have improved. What do they feel has changed within them? Why do they feel this change has occurred? What are some specific examples, from a specific problem, which illustrate the ways in which they feel their skills have improved? Do they have a different emotional experience when they approach a new type of problem at this point in the semester compared to the beginning? Students address these points through a written statement of reflection and self-assessment and an individual discussion with the instructor.

3. Writing/Presentation of Work Students in the Evolution of Humanity course deliver a multi-media presentation to the class at the end of the semester. They choose from a list of topics that we touch on during the semester but do not have time to cover in depth. This allows for varied student interest and allows students to dig deeper into an issue that they feel is relevant. In general, their presentation skills require a great deal of refinement.

Music Ensemble

1. Thinking Routines: Think-Puzzle-Explore; 90% of What? The mystery of ensemble assessment

Students pondered the following question: “How do you think teachers assess your work in ensembles?” They collectively arrived at ten categories: participation, focus, progress, effort, passion, attendance, communication, organization, performance skill, and experimentation. They were then split into small groups to discuss a few categories to think of ways these categories could be shown in the process of learning music. Finally, they were asked to weigh the importance of each category in the whole assessment. This initial discussion was very helpful in getting the students to think about what matters to them in ensembles, and how they can show progress toward these goals. Moving forward, we are going to meet with this year’s juniors in May to evaluate the results of this discussion on their work this year, and continue fine-tuning the process for next year.

2. Critique in Ensembles

- daily coaching sessions: coach meets with individual ensembles to assess progress toward concert preparation; conversations between students and coach to analyze many elements in the music including intonation, rhythmic precision, balance, texture, form, and expression.
- periodic peer critique sessions: one to two times per unit ensembles pair up and play for each other, describe what they are hearing, ask questions of the performers, respond to areas performers have requested for critique.

3. Written and Oral Communication

- Oral: conversations in daily rehearsals are authentic, organic use of language developed in music theory seminars and other seminars, applied to real-life situations of needing to communicate with other musicians. Documentation and assessment of this type of communication is difficult, because it happens ephemerally in the natural setting of rehearsal, and any effort to turn it in to a document or an assessment is an artificial and unnatural imposition on the process. However, the results of this communication can be clearly heard and seen in the music, by noticing how the ensemble plays together, how they arrange themselves on stage, how in tune and in time they are with each other. Assessment of the communication is not the communication itself, but the results of effective communication through higher-level performance.
- Written: assignments geared toward the focus of the ensemble assignment, such as historical placement, mapping the form of a piece, commenting on the arrangement needs for a particular ensemble; artist statements appearing in the program are a very minor part of the assessment, and are a brief account of the process leading to performance.

Music Composition

1. Visible Thinking: Tune into the Melody

Students observe techniques used in good melodies by using **See Think Wonder** Example: Took a Beatles tune, used **See Think Wonder** to think about chord, tune, and repetition. Using scaffolding, students decide the key, write out scale tones, chord tones each note the melody is - what beats do they fall on - what are the most common beats/ tones, what tone does the melody end on. They can observe good melody writing - see/think/wonder. It is teaching them attributes/facets of a musical melody, so they might get a clue of what is a good melody.

2 Critique, self, peer assessment example

For critique of ensemble rehearsals, we do both oral and written work. Students critique their own performance within the ensemble and the ensembles performance as a whole. We also have peers critiquing another ensemble.

The purpose of effective ensemble rehearsal critique is:

- (i) to achieve the best possible performance by the ensemble and by each person in the ensemble
- (ii) make the best use of rehearsal time to achieve these goals
- (iii) Ensemble rehearsal critique is designed to allow each student to record perceptions of their own playing, perceptions of the entire ensemble, and importantly they would recommend as practice strategies to ensure improvement of the performances.

The students are given a handout outlining typical factors to consider and listen for typical factors to consider and listen for include:

- **Dynamics** (volume, do you vary how loud or soft you are playing)
- **Balance** between instruments (can everyone be heard, should some instruments be quieter than others)
- **Intonation** (are you in tune? are you in tune with the ensemble)
- **Tone** (how your instrument sounds: is it a “good “ tone? thin? strong? Is it stylistically appropriate? Does it complement or overpower other instruments? Does it change throughout the song?)
- **Form:** can you articulate the form? (e.g. V Ch V solo Ch Ch outro or AABA). Is each section of the form clear? Do you change what you are playing in each section? Are the transitions between sections smooth?
- **Texture** (how many instruments are playing at one time). Does the texture vary? Do all instruments play all the time? Do any instruments drop out at any time?
- **Time.** Is everyone playing in time? Is everyone playing in time with each other? Does the rhythm groove?
- **Listening.** Is everyone listening to each other – for dynamic changes? for the rhythm? for transitions? Are you only concentrating on your part?
- **Style.** Are you performing the song stylistically correct – rhythms, phrasing, chord voicings, sound? Do you want to perform the song stylistically correct?)

For written critiques, students (or their peers) will complete a worksheet and then read out their critique. For oral critiques students can use the worksheet as a reference. An important part of the critique process is to get students to use appropriate musical terminology.

3. Substantive writing products or presentation.

None of the classes I teach now involve substantive writing or presentation. History of Rock and Understanding Jazz currently use quizzes that require short written answers. More substantive written assignments or research papers could be used if the length of class was longer (as classes in the Music Dept. they are only 5 to 6 weeks long – allowing time in class to do a research paper/presentation would limit the amount of material I could cover. As a 1 semester .5 class, there would be more time to include it).

Social Studies

1. Visible Thinking--The Mad, Mad Paradox of Change

We use the thinking routines of **Chalk Talk** and **Table Talk** to get students to consider open-ended questions in Sociology, History, American Studies, and Urban Geography. We might ask them to analyze an episode of *Mad Men* in the Fifties as precursor to change in the Sixties, for example.

2. Critique/self assessment

In both Advanced America Studies and Urban Geography, students are required to complete a Semester Research Project. As part of this process, students must complete a Project Rubric where they assess the work they are turning in for each component of their project, e.g. bibliography, artist statement, process paper, meeting deadlines, etc. After the project is turned in, students are required to complete a Project Self Assessment. This assignment is more narrative in nature and allows students to reflect on their project and the work they did to complete it. All classes have at least one type of research project that includes several preparatory steps/pieces. These pieces often include more than one draft, and are **shared and critiqued in small groups and/or individually with the teacher**. Individual conferences always involve a series of questions (about the choices being made, their intent, sources, etc.) as well as expectations and recommendations. The idea is for the students to follow up on these and be prepared to pick up the same threads and discuss their progress at each successive conference.

3. Writing/Presentation

For the projects described above, regardless of what format the students choose, each student must write, at minimum, a 2-3-page process paper and a 5-page artist statement. Students are required to clearly state a thesis and support the thesis with evidence from their research.

As far as **presenting their work**, the same projects always result in a final paper, presentation (often w/ a Q&A segment), or artistic representation. Sometimes, all three are in the same project. In all, the basic expectation is that students have a clear thesis or central idea and that it is coherently supported and/or discussed - in whatever presentation format is indicated for the particular project. Other requirements - such as time/length, depth of research, whether or not the bibliography is annotated, etc. - vary according to the class and unit/project goals.

ⁱ P21's Framework for 21st Century Learning, <http://www.p21.org/our-work/p21-framework> retrieved June 28, 2016.

ⁱⁱ Visible Thinking, http://www.visiblethinkingpz.org/VisibleThinking_html_files/VisibleThinking1.html retrieved June 26, 2016.

ⁱⁱⁱ *ibid.*

^{iv} Hetland, Lois and Ellen Winner, Shirley Veenema, Kimberly M. Sheridan. *Studio Thinking 2: The Real Benefits of Visual Arts Education*. Harvard University Press, 2013. See more at: <http://www.pz.harvard.edu/resources/studio-thinking-2-the-real-benefits-of-visual-arts-education#sthash.HP5hXQts.dpuf>

^v Wiggins, Grant and Jay McTighe. *Understanding by Design*, ASCD: 2008, Chapter 4.

^{vi} Ritchhart, Ron; Church, M. and Morrison, K. *Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners*. Jossey-Bass; first edition, 2011.

^{vii} Students at the Center, <http://www.studentsatthecenter.org/resources/student-centered-assessment-video-suite> and <http://www.studentsatthecenter.org/resources/student-centered-assessment-resources>, retrieved June 26, 2016

^{viii} Ritchart, Ron. [Creating Powerful Learning Opportunities](#). Keynote address to the 5th Cultures of Thinking Conference hosted by Bialik College, Melbourne, Australia. August 2015.