

THINKING THROUGH ART: A TRANSFORMATIVE MUSEUM-SCHOOL PARTNERSHIP

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THINKING THROUGH ART: A TRANSFORMATIVE MUSEUM-SCHOOL PARTNERSHIP (REPORT)

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THINKING THROUGH ART: A TRANSFORMATIVE MUSEUMSCHOOL PARTNERSHIP

IMPACT STUDY DATA CODING & RATING MANUALS

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TEACHERS' CULTURALLY RESPONSIVE INSTRUCTION

DEFINITION OF CULTURALLY RESPONSIVE INSTRUCTION

The definition of culturally responsive instruction used for the study *Thinking Through Art: A Transformative Museum-School Partnership* is drawn from the definitions of the term used by the Boston Public Schools and the Isabella Stewart Gardner Museum's Thinking Through Art program.

Culturally responsive classroom management "is a frame of mind, more than a set of strategies or practices that guides the...decisions that teachers make" (Weinstein et al., 2004,p. 27). These decisions include tasks such as creating a physical setting that supports academic and social goals, establishing expectations for behavior, communicating with students in culturally consistent ways, developing a caring classroom environment, working with families, and using appropriate interventions to assist students with behavior problems, and still support students academically (Weinstein et al., 2003).

Boston Public Schools Definition

Boston Public Schools adopts the pillars and indicators of culturally responsive instruction from the Culturally Responsive Instruction Observation Protocol (R. Powell et al, 2017). These include: Classroom Relationships (establishing teacher care and a culturally responsive classroom environment); Family Collaboration (promoting open communication between families and the teacher, developing, partnerships with parents and caregivers, and valuing "funds of knowledge"); Assessment Practices (discovering students' strengths and literacy competencies, and observing students' potential for learning); Instructional Practices (incorporating students' cultural knowledge and affirms students' racial and cultural identities); Discourse (providing abundant opportunities for student conversation and explicitly teach the "language of power"); Critical Consciousness (exploring issues important to students and their families, encouraging students to engage in problem-solving of real-world issues, and analyzing biases in texts and aspects of popular culture).

Thinking Through Art Definition

Culturally responsive instruction in the context of Thinking Through Art includes: Classroom Relationships (teachers' ability to create a learning environment in which classroom relationships demonstrate caring and respect); Instructional Practice (teaching practices are equitable and open-ended);

Student Centered Teaching (teaching centers students' lived and learned experiences); Culturally Responsive Discourse (classroom discourse encourages the interrogation of assumptions and the exploration of diverse perspectives).

CULTURALLY RESPONSIVE INSTRUCTION BACKGROUND

The United States, and especially its urban centers like Boston, is home to a wide diversity of people – people of different origins, people from different countries, people who speak a variety of languages, and people with different interests, experiences, abilities and challenges. With diversity comes a variety of ways by which people express their cultural identities and ways of life. To live respectfully in our diverse society requires an understanding of cultures - the values, beliefs, norms, customs and lived experiences of people other than ourselves.

The diversity of our society is evident in classrooms across the country, and it has become essential that educators and students understand and honor culture. Teachers must exhibit high levels of cultural competency: the ability to recognize the differences among people from a different cultural group, respond to those differences positively, and be able to act effectively in a range of cultural environments related to that group (International Coalition of Sites of Conscience, 2019). Culturally responsive instruction is the manifestation of cultural competency in teaching practice.

Although classroom management research has helped teachers understand how to design a classroom environment to maximize learning, researchers have not adequately addressed issues specific to managing a classroom populated by students from diverse cultural and linguistic backgrounds (Muniz, 2020, Hammond 2015). Understanding the relationship between culture and classroom behavior is a frame of mind and a set of skills that help teachers in making informed decisions about inappropriate and appropriate classroom behavior. Culturally responsive instruction also invites students to share their lived experiences and prior knowledge, thus allowing students to learn from each other and create a community of learners.

TEACHING CULTURALLY RESPONSIVE INSTRUCTION

Thinking Through Art at the Isabella Stewart Gardner Museum uses the Visual Thinking Strategies (VTS) structure of discourse, which is a whole-class conversation carefully facilitated by the teacher. Teachers may also include nonverbal signaling, pair-share or small group discussions, individual writing or drawing, or other strategies to ensure that all students are engaged. Teachers practice creating supportive learning environments that are open and accepting, encourage risk-taking, and elicit multiple perspectives. Teachers increase their ability to hear, value, and assess student thought and expression. The artworks included in the TTA curriculum represent diverse cultures, eras, and makers, offering windows, mirrors, and sliding glass doors (Bishop, R. S., 1990). Teachers in Thinking Through Art are also trained on methods to disrupt biases and stereotypes that may arise in group discussions.

ASSESSING CULTURALLY RESPONSIVE INSTRUCTION

Changes in teachers' culturally responsive instruction skills due to Thinking Through Art are assessed by comparing ratings of teacher behaviors at the beginning and at the end of the school year. This beginning of the school year and end of the school year comparison is made for teachers in the treatment group (Thinking Through Art participants) and the control group (no Thinking Through Art) classrooms for the impact *Thinking Through Art: A Transformative Museum-School Partnership*.

This study analyses teacher culturally responsive instruction in the context of a whole-group discussion led by the teacher about an image provided by the Gardner Museum. The unit of analysis is the entire discussion session (7–15 minutes), which is audio and video recorded. Research Assistants set up two video cameras and at least one audio recorder (for supplemental audio) in the classroom to ensure that all students and the teacher are visible and able to be heard. One camera is focused on the teacher; another camera is focused on the students. Research Assistants upload the video files to a secure drive and erase the original files when they return to the Museum. They then label and file video files for analysis.

Culturally Responsive Instruction Rating Process & Rating Scale

The video recordings focused on the teacher are coded for teachers' culturally responsive instruction, looking for categories and indicators that are described in the next section of this document. For *Thinking Through Art: A Transformative Museum-School Partnership*, raters viewed and rated the Fall 2022 (pre) video first and then rated the Spring 2023 (post) video.

Raters first familiarize themselves with the teachers' behaviors by viewing the video of the classroom session and writing a brief description of their overall impressions about the types and levels of culturally responsive instruction behaviors present during the class session. Raters then view the recording a second time, and using a <u>Culturally Responsive Instruction Notes Worksheet</u>, they note the presence and absence of verbal and nonverbal culturally responsive instruction behaviors in chronological order, referencing the timestamp on the video to organize their notes. Based on their notes, raters complete the section of the worksheet that asks them to write their impressions, highlights and patterns they see in that data. Finally, the rater provides a rating from 0 - 5 to describe the degree of presence of each indicator of culturally responsive instruction skill. The ratings are as follows:

- Rarely descriptive of teacher practice happens less than 10% of the time. Includes teacher practices that are counterproductive or foster disruptions
- Occasionally descriptive of teacher practice happens about 10-25% of the time. Teacher frequently misses opportunities, or opportunities do not emerge
- Sometimes descriptive of teacher practice happens about 30%. Teacher behavior is inconsistent or ineffective
- Often descriptive of teacher practice happens about 50%. Teacher consistently attempts indicator with moderate effectiveness. Meeting expectations.
- Frequently descriptive of teacher practice happens about 75% of the time. Teacher is accomplished at exhibiting these skills, students exhibit these behaviors. Teacher choices elevate participation and the discussion
- Highly descriptive of teacher practice happens nearly 90% or more of the time. Teacher is highly successful, students are consistently exhibiting these behaviors. Discussion is characterized by deep, rigorous investigation

Raters work independently. To ensure inter-rater reliability, at regular intervals all raters code the same video. Once each rater completes their independent coding, the group compares their ratings, discusses any discrepancies and agrees on a final rating for each indicator of culturally responsive instruction.

CULTURALLY RESPONSIVE INSTRUCTION CATEGORIES & INDICATORS

01. Classroom Relationships

1.a The teacher demonstrates an ethic of caring.

- Eye contact
- Balance between focus on individuals and caring for the group
- Uses students names
- Open body language
- · Check for understanding
- Accepts clarifications, questions, and/or disagreements from students

1.b The teacher successfully creates an atmosphere that engenders respect for each person and models ways to demonstrate respect.

- Nonverbals (body language, eye contact, tone of voice)
- Teacher listens accurate paraphrase, response is essence of what student is getting at more than surface platitude
- Appropriately responds to disrespectful behavior (interrupting, side talk, getting in each others space, insults, laughing at each other) in a timely manner
- Demonstrates same level of respect/appreciation/validation to all students

1.c The teacher establishes the norms that all students are capable of learning and that not everyone learns in the same way.

- Students speak in home language when it is situationally appropriate to do so and academic registers when appropriate
- Teacher translates or facilitates translation
- Teacher responds to needs of diverse learners in the moment
- Preferential seating
- Modulates vocabulary to meet students where they are (defines terms, uses gestures to illustrate new terms)
- Points at image to ensure shared understanding of details being discussed
- Strengths-based approach assumes all students will participate in some way
- Affirms all responses that are on task

02. Instructional Practices

2.a The teacher establishes productive procedures that students use to know how and when to participate in discussion

- · Acknowledges hands up and when those students will get to participate
- Reminds students of nonverbals and sentence stems
- Frames discussion or reminds students during discussion with overview of participation norms
- Evidence of students' awareness of pre-existing classroom norms and procedures to guide discussions
- Teacher uses various strategies throughout the lesson to promote student engagement through talk (e.g., partner share, small group conversation, writing)

2.b The teacher aims for equitable participation

- · Provides sufficient time for students to collect their thoughts
- Attempts to ensure all students have a chance to speak before calling on a student again ("put your hand down if you've already been called on", "I want to hear new voices")
- Monitors the length of time spent with any given student to avoid prolonged back and forth with a single student at the expense of the group
- Urges students to participate by anticipating and noticing nonverbals indicating emergent ideas, possibly having a student share an idea with an adult in the room before speaking aloud
- Reminds students they can speak in their home language or participate nonverbally takes skill and time
- Uses the given time for the lesson to maximize participation

2.c The teacher refrains from guiding the discussion to a particular conclusion

- Reminds students there are many right answers
- Keeps multiple narratives or interpretations alive during discussion
- Uses linking and conditional statements to create multiple interpretations within the discussion
- If teacher brings in factual information or their own opinions, it is used to further curiosity rather than as an endpoint
- Explicitly notes revisions of thinking, multiple possibilities, and questions/wondering as positive contributions to the discussion
- Does not name certain ideas as correct, strong, or on the right track. Includes not picking certain ideas to follow up on with questions and encouraging other student responses to this idea.
- Does not summarize or try to explicitly achieve consensus

03. Student-Centered Teaching

3.a The teacher honors the diversity of students' prior knowledge and personal experiences

- · Seeks ways for students to bring in their own experiences
- Choice for evidence affirms students' individual experiences
- Explicitly acknowledges when students are activating prior knowledge or drawing from personal experience
- Acknowledges a connection or personal association in paraphrase, or otherwise affirms these connections as valid
- Linking ideas that are based on prior knowledge or personal experiences

3.b The teacher follows the lead of the students' comments, questions and interests to facilitate a deep investigation

- Questions follow student thinking rather than directing it. Teacher asks follow up questions based on the content of the student's comment.
- Questions are developmentally appropriate and do not require outside knowledge to answer
- Listens to students and asks questions that are intentional to deepen thinking rather than trying to shape thinking
- · Links comments to each other, ideally using student names to reference prior comments
- Concise paraphrases/responses
- Framing paraphrase to pick up on the essence of what the student is communicating, then pull out details
- Accuracy of paraphrase and use of vocabulary and framing to enhance expression of student idea
- Rigorous follow up questions designed to deepen student thinking

3.c The teacher supports students' ability to introduce, discuss and learn about issues that matter to them

- Encourage students to talk about sensitive topics like immigration, gender identification, women's rights, race relations, class, housing insecurity, family dynamics, and safety in age-appropriate ways
- Teacher framing in paraphrase expands from detail to societal structures/dynamics
- Support students who bring up touchy subjects, allowing for these topics to be part of the discussion
- · Monitor temperature and creates safety without quashing emotional or controversial responses

04. Culturally Responsive Discourse

4.a The teacher encourages students to build a habit of mind of interrogating assumptions

- The teacher consistently asks for or expects students to provide evidence to support their observations and views
- Follow up questions are specific, rigorous, and designed to deepen thinking
- Asks for evidence for claims that may seem obvious, may be explicitly to draw attention to their intention (assumptions about gender, type of animal)
- A variety of types of conditional language are used to create a conditional conversation
- Draws positive attention to students' ability to revise their thinking when presented with new information
- Demands strong evidence, not satisfied with circular reasoning

4.b The teacher actively encourages students to introduce and explore diverse perspectives

- Conditional, open-ended conversation creates comfort dwelling in ambiguity
- Reminds students there are many right answers and perspectives, or there is evidence that students are aware of this as a norm
- Linking to acknowledge when new ideas arise ("you're bringing another interpretation into the discussion, because you see it differently")
- · Body language, facial expression, and tone of voice are consistently open and accepting
- Students bring in diverse ideas
- Evidence that students understand that everyone can see the same image in different ways (for
 example, students using conditional language to link and frame their own comments as in agreement or
 divergence from other students)

4.c The teacher encourages students to respectfully discuss disagreements with each other

- Teacher's questions invite or open space for disagreement (Joseph thinks this is the girl's grandmother. Any other ideas about what the relationship could be?)
- Not using confrontational language to address divergent perspectives, not setting up an either/or debate
- Students and/or teacher explicitly acknowledge different perspectives when they arise in the discussion (verbal or nonverbal)
- Reminds students it's ok to disagree, ok to change their minds
- Reprimands students who call out disagreements disrespectfully
- Evidence of culture that doesn't permit disagreements that are interruptions or attempts to "correct" another student, or are otherwise disrespectful
- Uses examples of disagreements to encourage further thinking and discussion
- Students do offer comments that do not align with previous ideas, either others' or their own, respectfully demonstrating different ways of seeing and thinking



STUDENTS' SOCIAL-EMOTIONAL LEARNING

DEFINITION OF SOCIAL-EMOTIONAL LEARNING

The definition of social-emotional learning used for the study *Thinking Through Art: A Transformative Museum-School Partnership* is drawn from the definitions of the term used by the Boston Public Schools and the Isabella Stewart Gardner Museum's Thinking Through Art program.

Boston Public Schools Definition

Boston Public Schools defines social-emotional learning in terms of the competencies articulated in the SEL Standards issued by the Massachusetts Department of Elementary and Secondary Education. The standards are organized into five areas of competencies: self-awareness, self-management; social awareness, relationship skills and responsible decision making. These five competencies, developed by the highly-acclaimed Collaborative for Academic, Social and Emotional Learning (CASEL; https://casel.org), are widely used and serve as a definition and foundation for instruction.

Thinking Through Art Definition

Creating a student-centered environment in which all can collaborate and learn from each other is an intentional and essential Thinking Through Art design feature. Social-emotional learning in Thinking Through Art describes the ways in which classes create meaning together through the interplay of students' confidence in their own contributions to the classroom community, as well as relational skills including empathy, respect, and valuing learning from peers.

SOCIAL-EMOTIONAL LEARNING BACKGROUND

Creating a learning environment in which students can learn from each other is an intentional and essential Thinking Through Art instructional design feature. In order to do that, students need to be able to have the confidence to express their thoughts, actively listen to others and use relationship skills that communicate empathy and respect for others – especially those with whom they may not agree or do not share life experiences. The study design hypothesizes that students' social-emotional skills will increase when comparing students' interactions from the beginning of the school year with the end of the school year and when comparing the Thinking Through Art treatment classes with the control classes.

TEACHING SOCIAL-EMOTIONAL LEARNING

Thinking Through Art lessons center students' attention on a single work of art, and with teacher guidance, engage students in group discussions designed to increase their confidence as learners and build social skills that allow them to interact with and learn from others. Students are invited to express their own views, demonstrate empathy toward others and become open to multiple perspectives. These skills allow them to benefit from considering the knowledge and perspectives of others as they construct meaning and learn. Specifically, Thinking Through Art contributes to students':

- Self Confidence and Belief in Capacity to Learn: a student's belief that they can contribute something meaningful to a discussion
- Relationship Skills: a student's ability to connect with others by communicating clearly and demonstrating respect for others
- Empathy: a student's capacity to understand and share the feels of others
- Respect for Multiple Perspectives: a student's ability to acknowledge and value diverse interpretations
- Participation in a Community of Learners: when the class learns collaboratively by building on each other's thoughts and experiences to collectively construct meaning and reach deeper understanding

ASSESSING SOCIAL-EMOTIONAL LEARNING

Changes in students' social-emotional learning skills due to Thinking Through Art are assessed by comparing ratings of student behavior during a classroom discussion of a work of art or a narrative image at the beginning and end of the school year. This beginning of the school year and end of the school year comparison is made for students in the treatment group (Thinking Through Art participants) and the control group (no Thinking Through Art) classrooms for the study *Thinking Through Art: A Transformative Museum-School Partnership*.

This study analyses student social-emotional learning in the context of a whole-group discussion led by the teacher about an image provided by the Gardner Museum. The unit of analysis is the entire discussion session (7-15 minutes), which is audio and video recorded. Research Assistants set up two video cameras and at least one audio recorder (for supplemental audio) in the classroom to ensure that all students and the teacher are visible and able to be heard. One camera is focused on the teacher; another camera is focused on the students. Research Assistants upload the video files to a secure drive and erase the original files when they return to the Museum. They then label and file video files for analysis.

Social-Emotional Learning Rating Process & Rating Scale

The video recordings focused on the teacher are coded for teachers' culturally responsive instruction, looking for categories and indicators that are described in the next section of this document. For

Thinking Through Art: A Transformative Museum-School Partnership, raters viewed and rated the Fall 2022 (pre) video first and then rated the Spring 2023 (post) video.

Raters first familiarize themselves with the teachers' behaviors by viewing the video of the classroom session and writing a brief description of their overall impressions about the types and levels of culturally responsive instruction behaviors present during the class session. Raters then view the recording a second time, and using a <u>SEL Observation Notes Worksheet</u>, they note the presence and absence of verbal and nonverbal culturally responsive instruction behaviors in chronological order, referencing the timestamp on the video to organize their notes. Based on their notes, raters complete the section of the worksheet that asks them to write their impressions, highlights and patterns they see in that data. Finally, the rater provides a rating from 0 - 4 to describe the degree of presence of each indicator of culturally responsive instruction skill. The ratings are as follows:

- Rarely descriptive of classroom behavior almost never happens or is done
- Seldom descriptive of classroom behavior is not seen or done often
- 2 Sometimes descriptive of classroom behavior happens or is seen occasionally
- Often descriptive of classroom behavior happens or is seen more than not
- Highly descriptive of classroom behavior happens frequently

The outline on the following pages describes specific categories, indicators and examples of social-emotional learning in five categories: Possesses Self Confidence and Belief in Capacity to Learn, Demonstrates Relationship Skills, Expresses Empathy, Respects Multiple Perspectives, and Creating a Community of Learners. Each of the first four categories features four specific indicators of social-emotional behaviors. Consideration of the presence of those indicators results in a score of from 0-12 for each category. There is also a rating from 0-4 for the fifth category, which evaluates the degree to which the students and teacher are a community of learners. Thus, the range of scores is from 0 – 52.

SOCIAL-EMOTIONAL LEARNING CATEGORIES & INDICATORS

NOTE: Indicators of social-emotional learning are often expressed through nonverbal communication. While coding be sure to consider a variety of nonverbal indicators for each of the coding categories. Nonverbal communication includes, but is not limited to: posture, facial expressions, gestures, gaze & eye direction, head position, blocking parts of face, leaning in, turning around, grimaces, furrowed brows, widening eyes, squinting, and raised eyebrows.

01. Possesses Self-Confidence and Belief in Capacity to Learn

Confidence is essential in order for students to feel comfortable and secure enough to participate in a social setting and learn. Individual students build confidence when they are accepted for who they are, and when they feel known, cared for and safe enough in the environment to contribute their ideas.

1.a Students exhibit comfort and readiness to learn

- · Assume an attentive posture sit up straight, avoid slouching, crossing arms, or hunching shoulders
- Adjust positions to get comfortable, see the teacher, view the image
- Ask for/accepts assistance if needed to navigate the physical space, understand what is being said, define a word, or follow unfamiliar norms or behaviors
- Move gaze, eye contact and position to stay focused on teacher, when being asked a question and on the image and certain parts of the image when other students are talking

1.b Students contribute their ideas and guide the direction that the discussion of the image takes

- Willing to speak up and offer ideas and support those ideas with evidence
- Degree to which students verbally participate (percentage of students who participate, number of students participating more than once)
- Degree to which students non-verbally participate using signals like thumbs up, head nods, etc. (percentage of students who participate, number of students participating more than once)
- Bring a completely novel or opposing idea into the conversation, indicating a high level of comfort in the discussion environment and confidence in their ideas

1.c Students show confidence in selves as learners

- · Raise hands to be recognized to speak
- Speak loud enough to be heard
- Gestures to parts of the image to emphasize what they are talking about
- Repeats comment when asked
- Acknowledge that they can learn from others by nodding in agreement, giving a "thumbs up", looking
 intently at the speaker, building on something another student has said
- Demonstrate persistence in raising hand to signal readiness to participate, continue to engage after speaking

02. Demonstrates Relationship Skills

Relationship-building skills are the combination of behaviors students use to connect with others and form positive relationships. Skills like listening, speaking in ways that others can hear and understand; giving others a chance to participate, showing compassion and the practice of basic etiquette are essential for getting along with others and contributing to a classroom environment where all feel valued and can learn.

2.a Students follow established whole group discussion norms

- Sit within the group and generally follow directions
- · Able to wait turn to be called on
- Respect personal space by not sitting too close, poking, or engaging in other distracting behaviors
- Move with the flow of the conversation; do not interrupt by making idiosyncratic comments not related to investigating the image
- Demonstrate an understanding of the norms being established about the length and number of of verbal contributions; does not speak too little or too long
- Anticipate opportunities to participate (prepared to share when called on, provide evidence without prompting, etc.)

2.b Students demonstrate active listening

- Attentive when others are expressing their thoughts; keep gaze on image or speaker
- Track the conversation within the group with eyes, move position to see who is talking, tilt head to
 express interest
- Allow other students to talk without interruption
- Explicitly link ideas to those shared by another student verbally or non-verbally (points at the image while another is talking to track the comment, thumbs up or down, etc.)
- Remain attentive to the discussion even if appearing inattentive
- Adopts academic language into their comments (i.e. use of conditional language, or "what I see that makes me say that is...")

2.c Students show compassion to classmates or other people in the room

- Kind in small ways: moves over to make room, smiles, motions to a student looking for a spot to sit. comforting touch
- Use each other's names
- Open body language: leaning forward, arms and legs uncrossed
- Help a student with translation or finding the word they are looking for
- Quiet other students who are getting restless when a student stumbles when trying to speak or gets anxious and stops speaking
- Volunteers to share an idea when there is a lull or break in the conversation
- Respectful of others in the room

03. Expresses Empathy

When students are able to recognize their own emotions and the different ways others experience and feel, they are building a foundation for demonstrating empathy. For students, empathy involves the desire and skills needed to understand the feelings and perspectives of others including those from different capabilities, backgrounds and cultures than their own. This could include classroom interactions and/or students' responses to the image.

3.a Students show interest in understanding the experiences and feelings of others.

- Wonder about what it was "really like", either about an element of the image or the experience of another person.
- Put themselves in someone else's shoes by expressing shared felt emotion through tone of voice, movement of eyebrows, smiling, crying, laughing, raised eyebrows and open mouth, shaking head
- Give full attention when other students are expressing their emotions
- Give cues that express acceptance and understanding, either non-verbally or by repeating or paraphrasing what a person said

3.b Students respond with compassion to vulnerability

- React to instances where people are or could be hurt or treated unfairly.
- Express concern for the well-being of people in an image and/or in the classroom.
- Demonstrate awareness of possible biases, systems, and structures that contribute to intolerance and inequities
- Respond to classroom dynamic that they perceive as unfair
- Acceptance of the needs of all types of learners

3.c Students notice and acknowledge instances where people are paying attention to and helping each other, in the image or the classroom

- Point out behaviors in the image or by other students that show understanding and caring by other people. May include making a gesture in the area of the heart, giving a "thumbs up," using the hand gesture for OK; making eye contact and smiles
- Also includes pointing out behaviors showing people taking care of animals

04. Respects Multiple Possibilities

Seeking and respecting multiple perspectives are essential qualities of a just and equitable society, community, school and home. For students, respecting multiple perspectives involves listening and being open to ideas other than their own. Remaining open to more than one idea or explanation about the same thing builds students' capacity for tolerance of ambiguity.

4.a Students acknowledge there are views other than their own that are credible

- Nod in agreement when other students make an observation or expresses an idea even if the comments are not all the same
- Students express interest in others ideas, for example saying, "I never thought of that"
- · Listen without interruption, even if communicating disagreement nonverbally

4.b Students show level of comfort with ambiguity

- Stay calm with attentive and open body posture
- Accept different even contradictory ideas about the image by saying "I can see that even though I
 don't agree;" nod when different point of view is expressed
- Maintain interest in the discussion, look toward speakers, raise hands to participate
- Use conditional language to express ideas (i.e. "could be," "might be," "I'm not sure, but I think..." etc.)
- Bring a completely novel or unexpected idea into the conversation (high level of comfort in the discussion environment, academic risk taking)

4.c Students demonstrate curiosity

- Ask questions to learn more; puzzled expression on face, saying something like "that makes me wonder" or "how can that be?"
- Expressions of delight with a new idea: gasping, smiling widely, clapping hands; shakes head in amazement; eyes open wide as student calmly taking something in; says something like "wow," "that is amazing," "look at the size of that," "how can that happen?"
- Build on and stick with an idea to delve deeper into it, seeks other students thoughts/ideas; brings a new information or perspective to the conversation; connects ideas and seeks patterns
- · Points at the image while another is talking to track the comment

05. Creating a Community of Learners

Establishing a learning community within a classroom recognizes that learning is a social endeavor benefitting all students individually and collectively. Thinking Through Art classroom sessions are designed as a social learning experience - where students interact with one another and benefit from knowledge and perspectives other than their own as they learn and construct meaning.

The key features of communities of learners are:

- A shared willingness and desire to learn. An inquiry mindset students ask questions and wonder aloud
 about possible aspects of the image, the context and possible meaning and explanations. Students
 show pleasure or excitement about a discovery realized by self or another student.
- A conscious effort to establish a safe and supportive environment. Everyone has a voice, and that voice should be heard. Students are free to make comments and share ideas and information without worry of reprisal. Students are active listeners and work together with respect and effective communication; call each other by name; help others to stay focused or to figure out something; stay engaged all the way to the end of the session.
- A focus on collaborative, interdependent, rather than isolated, learning. There is mutual effort at making meaning; students build a robust understanding of the image together. Multiple interpretations are offered and accepted during the discussion. Students knows individual's strengths and weaknesses and count on certain students for particular things. Students make reference to learning from each other.
- More student-driven than teacher-driven control over the direction and flow of the learning. Students
 know the rules for engagement and follow them without prompting. Students acknowledge and solicit
 the contributions of other students. Students take on increasing responsibility for guiding the substance
 and flow of the discussion.
- Meaningful and relevant content and outcomes of the discussions for participating students. The discussion is not a string of comments made by individual students and then dropped. Observations, questions and interpretations increase as the session goes on. Students identify patterns, make comparisons, make connections to situations and ideas not present in the image.

Community of Learners Rubric: Grades PreK - 2

Rating	Criteria
4	 Students focus on image, with little or no prompting by teacher, and are eager to contribute comments related to the image. Students understand and follow rules for participation in the discussion and sometimes remind other students to follow the rules Students begin to notice and respond to facial and body cues that represent the feelings of others. Without prompting, students treat others with respect and kindness Students recognize differences, similarities and positive qualities among their classmates Students acknowledge other students' comments and build on ideas of others by linking their comments to them
3	 Accomplished Students are increasingly able to maintain focus and attention on the image and make comments that relate to the image Students are increasingly aware of the presence of others and respect their personal space Students mostly listen when others are talking, without prompting from teacher or other students Students are comfortable with observations and ideas that are different from their own Students build on the comments of others, but not in explicit ways.
2	 Students increasingly turn their attention to the comments others are making about the image Students demonstrate readiness to participate by raising hand or approaching the image, and with support, point out their observations mostly to the teacher With support, students listen and demonstrate attention when others talk Students understand and practice taking turns Students repeat what others say or continue a list of observations made by others.
1	 Students are curious about many different things in the environment - each other, objects on display - they move their bodies to look more closely and to touch, they turn attention and gaze in many directions With consistent reminders, students focus on looking at the image Students share space, seating and objects with each other, with minimal disruptions With support, students begin to balance their own needs with those of others. Students make comments and point out observations that they see with little or no attention to the comments made by other students.
0	No evidence of community of learners

Community of Learners Rubric: Grades 3-12

Rating	Criteria
4	 Exemplary Students engage in identifying patterns and underlying ideas or principles when describing what they see Group has established a culture of respect and empathy; students listen attentively to a variety of perspectives; they pick up on verbal and nonverbal cues to understand what others are thinking and feeling There are extended conversational exchanges involving several students while others pay attention and express interest nonverbally Students are comfortable expressing their thoughts, don't hesitate to ask a question and are not reliant on teacher to remind them of appropriate behavior or the TTA structure for group conversation The conversation expands beyond literal descriptions of image and includes making connections between observations and concepts and issues they know about and/or their own ideas
3	 Accomplished Students generate a large number of responses to the question: "What more can you find?" Most are straightforward literal descriptions of an aspect of the image. Most students exhibit behaviors of respect and empathy; they mostly listen attentively; they signal connection to each other with smiles and gestures Conversation about a particular aspect of the image or idea are more frequent and include more than one student, many, but not all students exhibit interest in the conversation Most students are comfortable expressing their ideas and feelings without the prompting of the teacher and follow the TTA "rules of engagement" without prompting by the teacher – many provide evidence for their inferences and interpretation without prompting from the teacher Occasional instances of one or more students making a connection between observations and ideas and social issues, big concepts and/or their lives outside of school
2	 A handful of students generate responses to the question: "What more can we find?"; some students are quiet, their body language isolates them from the group – head down, very few facial expressions in response to comments from others Some students have attentive posture, eye contact and a few ways of showing connection with others Individual students offer observations and other comments, there is little extension of ideas from one student to another; communication is more frequently directed to the teacher than to other students A handful of students offer their ideas and observations without prompting from the teacher; others are called on by the teacher to participate; some students wait for the prompt from the teacher to provide evidence for their interpretations Comments remain related to the elements of the image with very little connection to big ideas or their lives outside of school

Community of Learners Rubric: Grades 3-12 (continued)

Rating	Criteria
1	 Students are slow to provide what they see and often repeat what another student has already pointed out; very few questions or statements of "I wonder?" Students are easily distracted by something happening in another section of the room; the overall energy is low Students stay within themselves – very little eye contact, gazing or turning to see other students; students much more attentive to the teacher than to other students Only a few students actively participate in the discussion and comments move from one topic or section of the image with no connections There are dead/silent moments during the lesson that are longer than time needed to gather thoughts before speaking; teacher works hard to get student responses with little or no response from most of the students Comments focus on the obvious and provide little or no opportunities for finding connections across the comments
0	No evidence of community of learners



STUDENTS' CRITICAL THINKING

DEFINITION OF CRITICAL THINKING

The definition of critical thinking used for the study *Thinking Through Art: A Transformative Museum-School Partnership* is drawn from the definitions of the term used by the Boston Public Schools and the Isabella Stewart Gardner Museum's Thinking Through Art program.

Boston Public Schools Definition

Critical thinking involves applying, synthesizing, and evaluating information to reach an answer or conclusion.

Thinking Through Art Definition

Critical thinking encompasses the skills students learn to formulate claims and solve problems. These include observation, identifying patterns, formulating arguments, and solving problems.

CRITICAL THINKING BACKGROUND

Examining the critical thinking learning that takes place during Thinking Through Art lessons is a key feature of the *Thinking Through Art: A Transformative Museum-School Partnership* study design. The study design hypothesizes that students' critical thinking skills will increase when comparing the beginning of the school year with the end of the school year written responses to a work of art.

TEACHING CRITICAL THINKING

The distinct kinds of critical thinking mental acts and states that form the foundation of the Thinking Through Art curriculum and are taught by Thinking Through Art - trained teachers include:

- · Identify information within an image
- · Make associations to stored knowledge and personal experience
- Draw inferences based on observation, association, and evidence in the image
- Consider multiple perspectives and interpretations
- Reasoning by ascribing meaning to an image based on synthesizing observations, associations, inferences, multiple perspectives and inductive and/or deductive reasoning.

ASSESSING CRITICAL THINKING

Changes in students' critical thinking skills due to Thinking Through Art are assessed by comparing ratings of student responses to a work of art or a narrative image at the beginning and end of the school year. This beginning of the school year and end of the school year comparison is made for students in the treatment group (Thinking Through Art participants) and the control group (no Thinking Through Art) classrooms for the study *Thinking Through Art: A Transformative Museum-School Partnership*.

This study analyzes students' capacity for critical thinking by systematically coding students' written, verbal, or signed responses to the question, "What's going on in this image?" when looking at a work of art or a narrative photograph. The unit of analysis is the individual transcribed student response. Research Assistants and classroom teachers direct students to produce their responses during the classroom data collection session by handwriting responses on a Student Response Form, by speaking into an audio recorder (managed by a Research Assistant), or by using the appropriate and usual adaptive devices to meet the students' communication needs at the time of data collection. Students may respond in any language. Research Assistants and classroom teachers apply opaque Student ID# labels on top of students' names on the Student Response Form to simultaneously redact their names and connect their work to their anonymized student ID numbers, using a class list kept by the classroom teacher with both student names and anonymized ID numbers for this purpose. For students speaking into an audio recorder for their response, Research Assistants read the student's ID number before the student speaks.

Research Assistants scan student responses, removing responses for students who have not provided consent to participate, and file responses by teacher in the secure drive. Students' hand-written, audio-recorded, or adaptive device assisted student responses to an artwork or narrative photograph are transcribed, and the content of the transcriptions are coded. Responses in languages other than English are transcribed and translated into English by professional translators.

Critical Thinking Coding Process

Student responses are coded for student critical thinking, looking for the categories and indicators described in the next section of this document. For *Thinking Through Art: A Transformative Museum-School Partnership*, raters analyzed the Fall 2022 (pre) responses first and then rated the Spring 2023 (post) responses.

Raters read each transcript of student written and oral responses to a work of art or narrative photograph and tally the presence of 12 indicators of critical thinking across four critical thinking categories. Finally, raters looked at the transcript in its totality and, based on the rubrics provided below, assign a rating from 0-4 for the level of reasoning exhibited. Note: Not all statements include codable critical thinking skills; some statements may be coded as multiple critical thinking skills across two or more categories.

Students' Critical Thinking

CRITICAL THINKING CATEGORIES & INDICATORS

01. Identifies Information

Gathering information is essential for communication. In order to acquire information students need to look closely at an image - looking for details and looking at all parts of the image. To do this requires the capacity to be mindful, concentrate and focus.

1.a Observes something in the image

- There's a dad[1.a] holding a kid[1.a]
- A bike[1.a] is right there
- I think they're[1.a] posing for a picture
- there are crabs[1.a] on the girl's[1.a] arms[1.a]
- In the background[1.a] there are bikes[1.a]

1.b Moves attention around the image and comments on things from different zones of the image

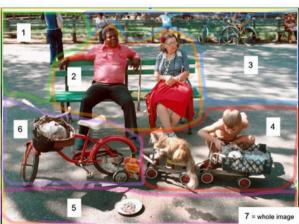
Notes a result of systematic looking. Code this skill each time the student moves into a different zone, including when taking in the overall image. In the art image, if a student references "bikes" (plural), that counts automatically as one move (two zones) because the bikes are in separate zones. In the narrative image, if a student references "cats" (plural), that counts automatically as one move (two zones) because the cats are in separate zones.

Art Image



Fernand Leger (1881-1955), Les Loisires— Hommage à Louis David, 1948-1949 © 2024 Artists Rights Society (ARS), New York / ADAGP, Paris Digital Image © CNAC/MNAM, Dist.

Narrative Image



D. Gordon, Untitled, 1978

RMN-Grand Palais / Art Resource, NY

1.c Uses words and ideas to describe aspects of the image, including interplay among aspects of the image

This includes adjectives, adverbs and directional descriptors like 'behind,' 'in,' ''surrounding,' etc. In the case of directional nouns like 'foreground' and 'background,' code as 1.c only when used as a descriptor (i.e., "the background people"). This category also includes the use of descriptive verbs (i.e. "the man is wearing a suit").

- Some people are brown[1.c] and white[1.c]
- The bike's[1.c] hinges are nowhere to be seen[1.c]
- I see people sitting down[1.c]
- there are crabs on [1.c] the girl's [1.c] arms
- This picture is ugly[1.c]
- There is a repeating[1.c] pattern that starts with[1.c] the contour of[1.c] the plants and continues[1.c] onto[1.c] the bike coil and floral[1.c] pieces
- In[1.c] the background there are bikes

Students' Critical Thinking

02. Makes Associations

Associations are connections. Students can make associations by seeing a connection between an aspect of the image and something in their personal experience or their knowledge about the world. Associations are also made by comparing two unlike things (simile) or by finding similar characteristics between two different things (metaphor).

2.a Applies stored knowledge or personal experience to describe something in the image, to help to make sense of the image

Code this skill for every instance of a named family relationship (i.e. 'mom,' 'dad,' 'aunt,' 'brother', 'abuela,' etc.).

- If the bike was made of rubber, it would just float up[2.a]
- There are crabs on the girl's arms[2.a]
- I think they already went to a splash pad[2.a]
- Those are their pets[2.a]
- maybe those are coins[2.a]
- he is smoking a cigarette [2.a] underwater, so it must be burnt out [2.a]

2.b Compares and/or contrasts two or more aspects located in the image in a meaningful way

- One of the people has darker skin compared to the pale paper colored skin of the others in the picture [2.b]
- Not a lot of people have the same bike [2.b]
- there are six people and one of them a different color[2.b]
- the bike looks small enough [2.b] for the kid
- They are also barefoot but at the same time [2.b] they all look wealthy, for example the two men in te back in front of the woman in orange have suits on.
- there's grass on the floor, not seaweed [2.b]
- but her legs are split, of of the legs are up[2.b]

2.c Describes some aspect of the image in the form of a simile (using "like" or "as") or a metaphor.

- I see it says the future [2.c]
- It looks like the Addams family[2.c]
- the girl's belt looks like teeth[2.c]
- there are teeth on the belly[2.c]
- I think yellow, like gold[2.c]
- they're Bugatti rich[2.c]

03. Constructs Meaning

This category includes interpretive claims and inferences that identify an underlying or unspoken meaning. These might include: what an item is used for, status of people, gender, race, emotions, age, where things come from or relationships among people. This category also includes active verbs (i.e. "petting the cat" or "riding the bike") which are interpretations rather than concrete descriptions. An inference can be made about an observation or association – therefore, the same statement can be coded in more than one category.

3.a Interprets aspects of the image, but provides no evidence for the claim

- There's one Black[3.a] person
- They probably own the beach [3.a]
- I see a leg and it's in the cloud[3.a]
- Eagles [3.a] in the top right corner sort of gathering [3.a]
- I notice a girl[3.a] fell[3.a]
- They're posing[3.a] for a photo
- I thought they were surrounded by [3.a] seagulls at first, but the birds look more like doves instead [3.a]
- They look like coins[3.a] but they're not[3.a]
- I see smoke[3.a]

3.b Interprets aspects of the image, and provides evidence for the claim

- I think they are underwater because the girl with the starfish is covered with very hungry crabs[3.b]
- I think that they're on the beach because they're barefoot[3.b]
- I agree with Lesem because the cats do look like they just got found[3.b] and maybe the boy is feeding them
- There is some sea life such as crabs, seaweed, different types of plants that would be found on the beach or underwater in the ocean [3.b]
- They could also be somewhat underwater because I see crabs and tons of underwater plants [3.b]
- I think they could be underwater because the artist probably made this for imagination [3.b]

3.c Works out what would be true if a possible condition were assumed

- If the bike was made of rubber it would just float up, and it would already be floating up because it's made of foam[3.c]
- Although they all have red on them, I don't think it represents a familial connection[3.c]
- You would have to pay him and he would let you borrow a cat and then later you would bring it back[3.c]

Students' Critical Thinking

04. Considers Multiple Perspectives

Ability to express uncertainty, consider more than one meaning, or revise ideas.

4.a Is puzzled; expresses uncertainty. Sometimes expressed through conditional language.

- I wonder if they are underwater[4.a]
- I don't know what that is [4.a]
- They could [4.a] also be somewhat underwater
- maybe[4.a] coins because it looks like the color of gold or a penny
- So if I'm right, the coins... oh, that's right. I'm curious[4.a]. So maybe the boy is not selling everything.

4.b Able to identify more than one way to describe the meaning of a work of art. Sometimes expressed by using "or".

- maybe coins because it looks like the color of gold or [4.b] a penny
- I disagree with Katty[4.b] because the yellow and black things are rocks
- I thought they were surrounded by seagulls at first, but the birds look more like doves instead [4.b]

4.c Revises own thinking; may include references to thoughts, perspectives, and insights from others, as well as self corrections.

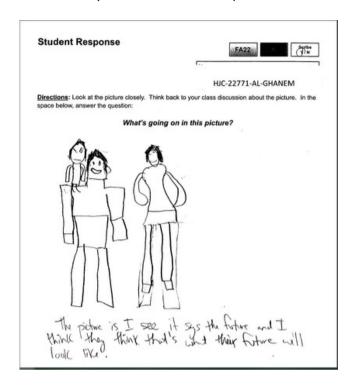
Every revision (4.c.) will also be coded as a 4.b.

- And then actually, she's not[4.c]
- I thought they were surrounded by seagulls at first, but the birds look more like doves instead [4.c]
- A chicken quacks. Not chicken quack, it duck[4.c]

Note: because students are looking at images, all reports of observations indicate the students' capacity to recognize the representation of an object in 2-D form as a stand-in for the item as it appears in the 3-D world. This is a key feature of visual literacy.

CODING STUDENT DRAWINGS FOR CRITICAL THINKING

If drawings that are included in student responses are obviously related to the image, they can be coded. The total tally for each student response includes their drawings and text.

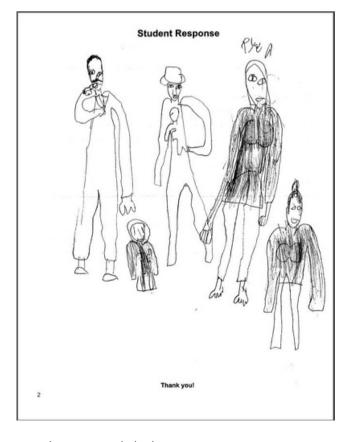


Student HIC-2-2771

[Scribe] The picture is I see it says[3a] the future and I think they think[3a] that's 1c what their future will look like[3a].

Drawing:

- 1a = 3
- 1c = 1



Student HJC-2-2777

Drawing:

1a = 6

1b = 2

1c = 6

05. Exhibits Reasoning

Reasoning is defined, for the purposes of this study, as forming an idea and/or ascribing meaning to an image based on the way(s) a student synthesizes the observations, associations, inferences and multiple perspectives they identified in the image.

To document the ways students answered the question, "What is going on in this picture?" and thus describe the ways they were organizing their thoughts and making meaning (reasoning), the prominent ways students use language as they investigate and explain phenomena, support claims with evidence, and share stories about their experiences were used as the organizing framework for this rubric.

The key ways that students use language for the purpose of communicating are:

To Inform - language is used to provide factual information. As students convey information, they define, describe, compare, contrast, organize, categorize, or classify concepts, ideas, or phenomena

To Explain - language is used to give an account for how things work or why things happen. As students explain, they ask and answer how things work or why things are the way they are.

To Narrate - language is used to describe real or imaginary occurrences using narrative devices like development of a character, plot, setting or story. Narratives serve many purposes, including to instruct, entertain, teach, or support argumentation.

To Argue - language is used to express likes and dislikes related to an image; make claims using personal experience, evidence and/or logic. Language is also used to make claims and explain or defend an idea.

Raters use a holistic Reasoning Rubric to arrive at a rating from 0-4 that characterizes the level of reasoning evident in the students' responses. Recognizing that there are differences in capacity for reasoning at different grade levels, four reasoning rubrics are used to rate students' use of reasoning skills - one rubric for grade K-2; one for grades 3-5; one for grades 6-8 and one for grades 9-12.

Reasoning Rubric: Grades PreK - 2

Rating	Criteria
4	 Exemplary Offers ideas with growing precision: "The old people sitting on the bench are married." Describes a particular item or person in the image in detail Notices instances of action in the image Offers evidence to support conclusions and assignment of attributes Compare or contrast: "The people in the back are resting." Communicates with sentences and some phrases
3	 Accomplished Offers ideas with developing precision: "The boy is petting the cat." Describes characteristics, patterns or behavior: "The kids are in the front playing." Draws conclusion or assigns attributes to aspects of the image Questions things seen in the image, assumptions and conclusions Communicates with simple sentences
2	 Developing Describes something with attempted precision – fewer frequently used words and phrases: "orange and red color"; "Family on blanket" Uses some organizing idea when making a list of things from image Notices relationships among people and/or other items in image Communicates in sentence fragments
1	 Beginning Offers ideas by using frequently used words and phrases: "Boy with dog"; "It is a tree." List of items from image is short and random Tells something about self: "I have a cat." Communicates in words and phrases
0	No evidence of reasoning

Students' Critical Thinking

Reasoning Rubric: Grades 3-5

Rating	Criteria
4	 Exemplary Uses a variety of types of elaboration Ideas expressed with vivid detail Ideas expressed using a narrative structure such as chronological order, focusing on a single character or aspect of the image, taking an idea from viewing an image into the future Supports claims uses information from the image as evidence Beginning use of compound and complex sentences
3	 Accomplished Expanding repertoire of words and phrases including idioms Ideas expressed with growing amount of detail Growing number of opinions or claims, some supported with evidence: "I'm saying that was in the beach because I see little oranges animals" Ideas expressed and organized in a way that conveys an emerging sense of purpose - inform, explain, narrate, argue: "They are in SpongeBob's world. I'm saying that because to me they look like they are underwater"
2	 Developing Ideas expressed with growing precision of language Growing number and types of elaboration States opinions or constructs tentative claims Uses articles and other demonstratives to describe an idea: "The baby is very small." A growing sense of purpose evident with language choices and emerging sense of organization of ideas Simple or compound sentences used with familiar ways to combine the clauses
1	 Offers ideas with some precision of language Reports observations of phenomenon (action, structure) to explore understanding of what is going on in the image An emerging sense of purpose in the statement - to inform, explain, narrate, argue: "They are at the beach with bikes. There are 6 people. 2 have suits on and 4 people with bathing suits on. There's crabs on them." Uses short sentences linked by a topic or idea
0	No evidence of reasoning Observations do not include evidence or reasoning: "I see a girl"

Reasoning Rubric: Grades 6-8

Rating	Criteria
4	 Exemplary Uses multiple types of elaboration - adding in classifiers, embedding clauses after a noun and some ways to condense ideas Describe people, objects and scenes using imagery, metaphor Identify and describe various relationships among ideas and information to support an emerging thesis Chooses the most relevant evidence to support a claim and counterclaims Explains a clear connect between their claim and support Using compound and complex sentences with a variety of ways of combining clauses such as "and", "yet", "because", "when"
3	 Accomplished Expanding repertoire of words and phrases including idioms Ideas expressed with growing amount of detail Most claims are supported with elements from the image A wide variety of sentence types with increasingly complex clause relationships - offer a concession, a cause, condition or contrast
2	 Developing Growing number and types of elaboration Makes claims that could be supported by the image, but few or none refer to any elements of the image as evidence A growing number of words and phrases Conveys intended big idea using predictable organization - finally, first, in the top of the picture Sentences with emerging use of clauses. No use of conjunctions
1	 A small repertoire of words and phrases with developing precision. Makes a claim that could be supported by the image but does not refer to any elements of the image Describes aspects of the image in more detail in order to understand what is going on Conveys intended big idea with emerging sense of clarity Uses simple sentences linked by a topic or idea
0	No evidence of reasoning Observations do not include evidence or reasoning: "I see a girl"

Students' Critical Thinking

Reasoning Rubric: Grades 9-12

Rating	Criteria
4	 Exemplary Elaborates in ways that convey intended purpose using image-specific or content-specific organizational pattern Describes image identifying relationships and overall features and characteristics to articulate an emerging thesis Chooses the most relevant evidence to support a claim Explains a clear connect between their claim and support Strategic and creative ways to connect ideas throughout the text Uses external sources of information that are relevant to supporting claims and counterclaims Uses a wide variety of sentence types that show complex relationships: "Despite the obvious problems with equity, some people"
3	 Accomplished Expanding repertoire of words and phrases including idioms Ideas expressed with increasing precision Most claims are supported with elements from the image A wide variety of sentence types with increasingly complex clause relationships - offer a concession, a cause, condition or contrast
2	 Developing Growing number and types of elaboration Makes claims that could be supported by the image, but few or none refer to any elements of the image as evidence A growing number of words and phrases Expanding text that conveys intended purpose using generic organizational - introduction, body, conclusion Sentences with emerging use of clauses. No use of conjunctions
1	 Short text that conveys intended purpose using predictable organization: "Finally"; "Families eat together" Describes aspects of the image in more detail in order to understand what is going on Makes a claim that could be supported by the image but does not refer to any elements of the image Uses some types of elaboration Uses simple sentences linked by a topic or idea
0	No evidence of reasoning Observations do not include evidence or reasoning: "I see a girl"

