SUMMARY: THEMES FROM THE GAZE PROJECT

Purpose of study (session 1): Both instructors presented the study as "learning to see," a concept that included observational skills, but appeared to have broader implications. In the clinical reasoning group, more emphasis was placed on clinical thinking. Links were also made more explicitly between observation and differential diagnosis. Generally speaking, the presentations of study purpose in the clinical reasoning group tended to emphasize highly desirable goals of medical education, honing clinical thinking and skills of differential diagnosis.
Purpose of study (session 2): making decisions about patients (cd); reiterates emphasis on seeing (a); improving observation skills and paying attention to what we see and how we see it (d)
Purpose of study (session 3): becoming careful observers, identifying key factors – refinement of model – figuring out what's important and what's not: reduction of key factors, more discriminating in selection, awareness of what's pertinent (cd); recognize and describe what we're seeing (a)
Setting the tone for the study (session 1): LR emphasized the seriousness and rigor of the study by comparing it to an RCT. By contrast, JB presented student participation as courageous, radical, and pioneering.
Setting the tone (session 2): reiterates being bold and free in interpretations (a)
Student attitude (sessions 1 and 2): Student attitude across all four conditions seemed quite comparable. Some anxiety secondary to participating in an "experiment" was evident, represented by joking, laughter, and expressions of nervousness. Students overall were attentive, focused, actively engaged, trying hard, and participatory in all conditions.
Student attitude (session 3) – little more confrontive, shoe on other foot (cd); little more reluctant to participate (d)**Pedagogical approach (session 1):** The instructors had similar teaching styles. Both were engaging, intelligent, and knowledgeable. Both tended to use a Socratic teaching style, JB more so than LR. LR relied more on humor; JB was more reinforcing, used more paraphrasing, their cognitive approach and analytic styles. Both provided problem-solving tasks to students, although the art/dance tasks were less familiar than the clinical tasks.
Pedagogical approach (session 2): LR more reinforcing and encouraging; involves quiet or recalcitrant students; cd session very routinized – students present cases, patterns identified, resulting in diagnosis
Pedagogical approach (session 3): LR's thinking extremely transparent; students encouraged to "drill down deeper" in their thinking; more shaping and limiting of process (cd); students present case to instructor – the learners take over responsibility as teachers (cd); getting students to write down observations (a) and actually get up and point out different gestures in paintings (a)
Establishing linkages (session 1): a) linkages within medicine: LR emphasizes logical links between observation, pattern recognition, and differential diagnosis b) linkages between arts and medicine: JB uses similar language to LR by talking about observation, key elements, pattern recognition; asks students to "diagnose" the dance; students demonstrate similar cross-over by talking about "range-of-motion" in dancers; more so in arts-only condition – effort made to make more explicit connections (Monet painting, stead and clouds blend together the way "in medicine, things bleed together and need to

be sorted out"); specific parallels made between observing a painting and observation of patient; "physical examination" of painting (through leaving seat, looking closely, pointing out aspects) parallel to physical exam of patient

Establishing linkages (session 2) – videotape of student-instructor with autistic children perceived as healer, able to enter into their world; importance of communicating with patients on their level; "be yourself" with your patients

Follow-up written feedback from clinical decision-making (session 1) –

Main concepts – to be a better observer and better organize differential diagnosis; looking for patterns; acquiring information through careful observation; paying attention to obvious information

Usefulness – students see benefit as ways of managing patients so as to leave "little room for error"; help direct thought process for patient management; help look at things in a different way; they thought the session was very helpful in developing clinical observation and pattern recognition skills, less so in developing empathy

Session 2

Purpose – making decisions about patients

Pattern recognition – students look for patterns in series of clinical pictures – process of identifying details, summarizing pattern; consistent theme is not jumping to diagnosis; students present cases, patterns identified, resulting in diagnosis; importance of focusing on details, then reintegrating them into the big picture

Emotional responses – joking about "psychosocial" patterns of alcoholic and homeless

Session 3

Refining key factors – learning to reduce key factors, be more discriminating, be aware of red herrings, recognize what's pertinent; more intense – limiting key factors, voting on key factors;

Justification - emphasis not just on observation but on justification of importance

Time-line – more emphasis that disease occurs and develops over time

Emphasis on "pushing yourself through the process"

Story – concept of "retelling the story" to see if it can be seen differently

Written feedback cd Session 2

Main concepts – recognizing patterns (6) (patterns lead to diagnosis; different sources of pattern recognition; follow the pattern, don't be misled by misconceptions); looking at details (4); being able to describe what you see; listening (2); appreciating pertinent positives and negatives; observe physical findings without trying to diagnose; pt.'s appearance may tell more than lab results; how to come up with differential diagnosis; how to look beyond the superficial

Usefulness of session in terms of training as physician – improved observation skills (3); learned to slow down, not jump to diagnosis (2); learn new patterns; learned how to recognize patterns through different methods; seeing pathognomonic pictures and hearing cases; focusing on obvious but often ignored features like gender and age in identifying patterns; opportunity to talk about details that seem trivial, but are intrinsic to diagnostic process

Relevance to clinical observation skills – learned new patterns; realize how much you know by just taking time to look and listen; pictures honed observational skills; learned to look for key elements; practice in a particular thought process; learned to see

subtle differences between similar appearing pathologies; trust gut instinct that what I'm seeing is somehow not right

Relevance to pattern recognition – broadening perception of different patients and presentations; not to jump to conclusions when see similar pathology; exposure to new patterns; developing conscious awareness of thinking about and looking for patterns; learning to pull random information together

Relevance to empathy – only 2 comments: already have empathy; indirectly, because appreciate extent of certain diseases

Applying training in clinical setting: pattern recognition makes clinical diagnosis more efficient; systematically thinks about each organ system when formulating differential diagnosis; used info on medicine shelf exam; noticed patterns in 3 patients; looked at patients' hands more carefully; asked attending about connection of bump to other symptoms; couldn't because "freaked out" by start of third year; hard to see patterns initially, but can see retrospectively; make mistakes in identifying patterns; can r/o certain diagnoses based on their not fitting the pattern

Applying training in non-clinical setting: becoming more observant as a person, not just a medical student; recognizing more patterns in human behavior and interpersonal relationships; trying to be more observant generally to process information faster and see patterns (to navigate traffic better)

What liked about session: new knowledge acquired about certain diagnoses, as well as observing patterns; learning new facts about specific diseases (4); reminding of thought process that should be used in clinical medicine; liked coming up with own patterns to share with group (2); patterns "invaluable" in patient care; seeing patterns "a powerful tool"

Themes developed in arts/dance condition relevant to medicine

Awareness of personal emotional responses (session 1) – developed in arts/dance group: awareness of feelings of uneasiness, nervousness, anxiety in response to dancer; idea that students have different emotional responses to things seen (most liked classical more than modern dance) (d); **deviance/orderliness -** discomfort to unexpected, unfamiliar; nontraditional dance evokes snickers, puzzlement, "nervous" response; in surreal paintings, incongruity is described as "ominous," "things that don't make sense" are "disturbing; students laugh at Jackson Pollock, describe it as "splatter"; by contrast, clean lines, realism, symmetry, balance, harmony have appeal (d); students tended to like paintings that had narrative aspects (story lines, people), but also liked Kandinsky, Pollock paintings because intriguing, playful, could have multiple interpretations (a); de Chirico's painting of small heads – demeaning jokes by students about bowling pins and pinheads (a); comment about Mickey Mouse ears in Magritte painting leads to comment by JB that personal projections onto painting (or patient) can distort meaning or superimpose inappropriate meaning (a); JB suggests order can be found within apparent chaos if studied carefully; JB makes explicit link between unlikable paintings and unlikable paintings – value of probing to deepen understanding (a)

Personal emotional responses (session 2) – joking about "psychosocial" patterns of homeless and alcoholic (cd); student-instructor in dance condition seen initially with some negative judgment, then as more accepting (d)

Personal emotional responses (session 3) – nature of presentation: information can be presented in different ways (judgmentally, harshly, sympathetically,

compassionately); need to ask, how is thing being presented and why; look beneath surface of things, beyond initial negative reactions (Ugly Duchess) (a); we're often drawn to pleasant, straightforward, simple (Renoir); but students also appreciated paintings that were more complex, edgier, gave them more to think about (the "ugly" paintings); explicit link made to difficult patients (a); identification of own emotional responses to dance tape, and how they evolved through repetition/familiarity (shock to comfort) (d); students able to identify positive, appreciative emotions connectedwith ambiguity, complexity, ironies of tape (d)

Emotions recognition (session 2) – recognition of various emotions through examination of series of paintings; JB makes explicit that we use observation of physical evidence to make deductions about ses, emotional states (a); seeing beneath surface – troubling elements beneath happy exterior (a); same emphasis on recognition of emotions through dance and paintings (d)

Emotions recognition (session 3) – practice in recognizing and labeling a range of emotions across paintings; emphasis on justification for recognition of emotion, linked to justification for recognition of symptom; emphasis on how a particular part of the body (eyes, hands) can express emotion; emphasis on emotions as conveyed by characters and expressed by artist; identification of emotions expressed in dance segment (Inside-Out) (d)

Classification – point made that it's sometimes hard to classify our observations correctly; is a sound music? (d

Multiple interpretations (session 1) – possibility of different interpretations from same evidence (painting of Railroad Bridge by Monet) (d); multiple ways of determining the major focus, but each must be justified (a); **justification** crucial when multiple interpretations possible (a); **presentation -** not just what is observed but how it is presented will lead to different interpretations (a)

Multiple interpretations (session 3) – even one figure is "not just one thing," can be understood in different ways; same for gestures; when there are conflicting interpretations, importance of seeking resolution through discussion and sharing of ideas; Dali (Desert Tribe/Woman's Face) – we can see very different things from same data (a)

Justification (session 3) – since multiple interpretations are possible, importance of clear justification

Deep seeing (session 1) – learning to see beyond the expected, what is automatically observed (d); importance of paying attention, not discounting, the unusual, the unexpected (a); importance of not missing things other than where the eye is initially drawn (a) – "what is going on in shadows"; important things can happen **off center-stage**; pay attention to the edges, to "**surprises**" (a); **repetition –** importance of revisiting first impressions; will see more, perhaps understand differently, second and third time around (d); continued viewing of painting leads to greater appreciation; students comment previously incomprehensible paintings make more sense, understand their inherent logic – they like them better (a)

Deep seeing (session 2) – learning to see below the surface of a painting (Renoir Girls in Circus)

Deep seeing (session 3) – beneath surface, beyond initial negative reactions (Ugly Duchess)

Pattern recognition (session 1) – how do we reconcile things that don't fit in the pattern?(d); when you observe two different things (in paintings, in patients), try to establish their relationship (a); note similarities and differences in details and composition (across painting and across patients) – JB gets students to draw explicit parallels to medicine (a); look for **symmetries and asymmetries** in both painting and medicine **(a); refinement of pattern –** distinguishing between which elements are key and which are peripheral – points out can ask same question of symptoms and aspects of a painting (a)

Pattern recognition (session 2) – learning to see the connection between patterns and decision-making; learning how to see mistakes in patterns; students comment can see patterns retrospectively, but hard to see initially; has learned to rule-out diagnoses based on not fitting patterns; learning not to jump too quickly to diagnosis; **parallels –** learning to see parallels in physical features across figures and between figures and nature (a); **symmetry –** improved in ability to recognize; distinguish background from foreground (d)

Pattern recognition (session 3) – importance of learning to identify similarities and differences across paintings

Negative space (session 2) – what's important is not just seeing what's thee, but what isn't; linked to pertinent negatives in medicine

Parts and whole (session 1) – it can be useful to break down what you see into sections (a)

Parts and whole (session 2) – beginning to understand parts of picture in relation to its whole (d)

Details and big picture (session 1) – how details (dancing in toe shoes) can demonstrate overall process or theme ("rising up") (d)

Details and big picture (session 2) – importance of focusing on details, then reintegrating them into the big picture (cd)

Refining key factors (session 3) – need to figure out which are important aspects of painting – explicit link made to patients (a)

Attention to relationships (session 1) – attention paid to relationships, emotional connection between dancers in modern dance; point made that in modern ballet, there is disappearance of relationships, narrative – instead emotional detachment (d); student notes, and instructor echoes tenderness and "sweet emotion" between mother and child in van Hauk painting (a)

Attention to relationship (session 2) – students learning to see pattern recognition in their interpersonal relations outside of clinical medicine (a)

Attention to relationships (session 3) – students asked to identify relationships among characters, and to decide which are major and which minor characters, and how is that conveyed (a); themes of interdependence of dancers, harmony between dancers, interrelatedness, mutual support (d)

Story (session 1) – JB points out if remove people from Monet painting, "have less of a story"; points out drama in Rembrandt painting – makes explicit link between story told in painting and importance of understanding the emotional context, the "story," of patients (a); importance of understanding the drama surrounding the main character (Jesus in painting, patient in medicine)

Story (session 3) – stories of Othello, Jesus; what story does painting tell?; idea may be more than one story being told in a given painting

Empathy – points out studying patients is a way of developing empathy

Attention to meaning (session 1) – meaning of painting and meaning of illness for patient (a); makes point meaning can change

Attention to meaning (session 3) – by looking closely at details, we can decide what a situation means (a); brainstorming about the "meaning" of the dance tape (d)

Challenging assumptions (session 2) – LR points out need to question assumptions of gender (a)

Challenging assumptions (session 3) – need imaginative flexibility to rethink what we've decided is important based on additional information (Van Gogh – Blue Cart) (a); dance challenged assumptions about a) what dance is b) what disability is; encouraged "out-of-box" thinking

Time-line (session 1) – point made that dance occurs in time (d)

Time-line (session 3) – point made that dance occurs in time, contains evolution and change

Session 1 (a and d) – in dance condition, many themes mentioned with relevance to medicine, but parallels were not made explicit and it's unclear how much students grasped them. In the art condition, more direct connections made between medicine and art

Session 2 (a) – emphasis on emotion recognition through observation of art; more emphasis on story (a); more effort to incorporate "medical" art; in groups a and d, both LR and JB present, with a lot of discussion of implications of physical presentations in terms of possible diagnosis

Session 3 (a) – focus on recognition of emotions (as conveyed in characters and expressed by artist); storytelling (Othello, Christ), including idea that there may be more than one story being told in a given painting

Session 1 (a and d) – What students learned, what liked

Parts and whole – importance of paying attention to detail; breaking things into component parts; don't get caught up in details, look at big picture; title may help you understand the artist's intent

Systematic analysis – using systematic approach about how one looks at things; importance of having a method; appreciated having a thought process, and being given time to think, importance of having a good guide

Repetition – "changing impressions, a picture can change";

Deep seeing - take a closer look to understand context and subtleties

Emotional responses – pay attention to yur own feelings and reactions

How to look at art, aesthetic appreciation

Medicine as an art – looking at a rash is like looking at a painting

Nice not having to have exact answers

Importance of imagination

Session 1 – How was session relevant to training as physician

Emphasized observation, although not in a patient context (some students wanted to look at patients, clinical photos)
Taught similar core underlying art and medicine
Some students suggested faculty and residents be trained in this manner
Different people have different ways of observing

Session 1 – Session increased empathy by…
Helping reconnect with feelings
Think about where people are coming from
Think more carefully about how people express themselves – why are they saying things (or painting things) in a certain way>
Appreciation for history and context (of patient)
Importance of maintaining a connection between the process and the objective (how the history is taken in order to achieve the differential diagnosis); in art, the artist chooses the process to achieve a specific aim
Importance of having a good team to work with – this is not completely clear; perhaps the point is that a good team helps you see other perspectives

Session 2
What students disliked: sessions too far apart, had difficulty remembering what material had been covered; sessions should be linked to specific rotations
What students liked: sessions pertinent to any rotation; more likely to step into patient's room and learn a lot without saying anything, before "formal" history-taking begins; appreciated more explicit links to medicine; usefulness of pattern recognition in interpersonal relations outside of clinical medicine; usefulness in identifying traffic patterns to make better time on freeway
Relevance to training as physician – 1) see symmetry 2) distinguish background from foreground 3) see parts in relation to whole 4) relationship of people to their surrounding environment

Session 3:
Applications to medicine – (a)
Look at others' points of view
Reconcile detail and big picture
Go beyond first impressions and look deeper
Importance of compassion and empathy
Learn from others – don't rely only on your own interpretation; see what others think; collaborate with others to find things that may have been missed
Avoid preconceived notions
Don't forget obvious, but don't overlook the not-so-obvious
Look for key elements on many levels
Applications to medicine - (d) –
Learned to find meanings even in situations (art, dance) not initially familiar with
When confronted with complex encounters, helps to break it down, then reconstitute as a totality
There are themes and patterns in everything

Get input from peers and experts about what's going on (in art and in taking patient history)

Place in medicine for intuition as well as intellectual knowing – close observation and emotional attachment also ways to understand patients

Spend time with patients

Cultivate appreciation and enjoyment of patients rather than pity

Allow egalitarian aspects of doctor-patient relationship to emerge

Who are insiders and outsiders in medicine? What do these boundaries mean?