

Codebook for Student Interview/Observation

Code #	Description of the Codes
Engagement (attitude)	<ul style="list-style-type: none"> - Active: Active, takes initiative, eager to participate. (e.g. hand raising, asking and answering questions) <ul style="list-style-type: none"> - On-task - On alternative learning task - Passive+: Ready to learn and participates. - Passive-: Doesn't take initiative, gives up, unprepared, or distracted - Disruptive: Actions interfere with self and other's learning, engaged in something unrelated to school - Attitude <ul style="list-style-type: none"> - Confidence / self-assured - evidenced by risk taking or teaching - Uncertainty, anxious - Fun, excited, engaged - Bored, apathetic, indifferent - Seeking reassurance - Frustrated or disillusioned/negative - Helplessness (too much work to do, "I don't know") - Proud - Unwilling to approach or accomplish tasks - Disrespectful / respectful
Intentionality (Design selection & cognitive demand)	<ul style="list-style-type: none"> - Unintentional - Ideation - independent / collaborative - Selection of appropriate materials/tools - Awareness (or lack) of one's own learning needs/process - Model matching - align the design based on models provided / wants to match model but can't figure out how to - Design decisions <ul style="list-style-type: none"> - Aesthetics (i.e., Color selection, interesting / Cool design) - Specific purpose in mind - Refer to model, guide, or worksheets - Planning or organization - sketching, diagraming, listing - Iteration <ul style="list-style-type: none"> - 4- Planned experimental trial and error - 3- Optimization (Change materials for better functioning) - 2- Basic trial and error - 1- Change based on observation

Cognitive Performance	<ul style="list-style-type: none"> - Inquiry - Retention, comprehension - Reasoning ability, articulates steps and outcomes to others - Ability to discriminate between different tasks - Able to combine one or more steps in the design
Challenging problems / Barriers	<ul style="list-style-type: none"> - Lacks knowledge of vocabulary, knowledge (retention) or skills - Lacks basic computer literacy - Student forced to be there - Student distracted by another student or other interruption - Limited time to work more on the project/design - Technology limitations - capacities, interface - Lack of relevance in curriculum - Lack of instruction generally - Lack of accommodations - Appropriate level of difficulty (not challenging enough)
Persistence Spectrum 1 - push past barrier 2 - multiple attempts	<ul style="list-style-type: none"> - Persistence (some combination of interest + effort) - Persist by peer support <ul style="list-style-type: none"> - Receive peer support/constructive feedback - Observe other student's work - Persist with teacher/helper support (guidance, positive encouragement) - Persistent use of support materials / tools / models / aides - Tinkering - try tool or material again with new settings or methods but without any apparent plan - the "click buttons randomly" or "click lots of times" behavior - No persistence (Give up)
Teacher instruction	<ul style="list-style-type: none"> - Teacher redirection / feedback <ul style="list-style-type: none"> - Task prompting (agenda-setting, what to do) - Thinking prompting (explaining WHY, helping process, relevance) - Positive encouragement / affirmation - Modeling methods, behaviors and attitudes for students - Teacher doing task for student / taking over - Curricular design to support metacognition <ul style="list-style-type: none"> - Planning, iteration, intentionality, persistence - Cultural or emotional relevance