Input-Output Measures

In-put/Out-put Skill/Ability Goals/Standards - Any input, Concrete-output - For use with any Text or Model / Defined by what is produced - "Can Produce" Checklist

Below is a list of things that can be produced or failed-to-be-produced. The "input" is whatever text (anything) you choose to use
[article, story, puzzle, task, text-book-lesson/chapter], the "output" is something specific the student produces.

Meta-Skills | Set 1: Summarizing (just using words and phrases)

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1. Produce a question that you have. (e.g. What does this part mean?) + varity of question words* / phrases	2. Produce a brainstorm. 3. Produce an identification of something you can recognize. Identify something.	4. Produce a list of new things you don't understand. 5. Produce a revision to a draft+ground-up rewrite from scratch	1. Produce an identification of the topic. (What is the main topic?)	2. Produce an idea map / idea-web (A flow-chart of the data in the text.) [Usually brainstorm first.]	3. Produce a outline (in linear-list form).	4. Produce a headline/title. (What would a headline or title be for this text?)	5. Produce a Q-A summary. E.g. Who- Where- When- What is happening? Describe the situation in terms of questions. (bullet point / idea map vs. sentence)

* See appendix 1

Set 2: Expressing & Paraphrasing (using sentences) | Set 3: Connections

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1. Produce a narrative summary. 2. Produce a paraphrase. (Paraphrase one or more key ideas)	3. Produce (a statement of) an idea or argument that is in the text. (Ideas, Positions, Support or Being Against)	4. Produce a debate or dialogue about the text. Outline and write a debate between two characters.	5. Produce a data-representation: a framework, equation, chart , system, or pattern.Show us the pattern you see.	1. Produce a connection to a related field. 2. Produce a connection to recent news. How does this text connect to recent events?	3. Produce a connection to an unrelated field (interdisciplinary). How does this connect to unrelated fields?	4. Produce a connection to daily life: social/cultural/economic impact. What are the bigger-picture consequences, outcomes and implications?	5. Produce a statement about a future follow-up to this text. Where can this discussion or process go next? (a connection to the future)

Set 4 Critical Thinking / Evaluation / Value

1	2	3	4	5	6	7
1. Produce an (identification of the) agenda, purpose, subtext, and bias of the text and author.	2. Produce (a identification of) the quality of data, including clarity and errors. e.g. True Premises. "This section is not clear."	3. Produce (a statement on) omissions of important data and relevance of what is included.	4. Produce (an identification of) good or poor quality of the argument.e.g. Sound, Cogent, Valid	5. Produce an overall characterization of the text, argument, or position (yes/no, good/bad, agree/disagree)	6. Produce (a statement on) the relevance and implications of the overall text and main ideas and topics. (e.g. "I disagree, but the topic is relevant to ___." or "Technically I agree with the statement, but it and the topic are irrelevant.")E.g. Red Herrings, System ID, Value vs. Disturance	7. Produce an identification of what is valued/valuable. (Optional: What is the desired outcome? What is the desired course of action?)

Modes/Forms of Expression & Communication 1: A.transfer between B.in-combination | Modes/Forms 2

Modes/Forms of Expression & Communication 1: A.transfer between B.in-combination			Modes/Forms 2			
1. Produce an essay or Standard Format Report (titles, sections, etc.)	2. Verbal/audio/ audial/aural 3. physical/tactile 4. visual/picture 5. Model, Framework, or Symbolic- Equation 6. raw (survey) data	7. Produce a figure: chart, graph, & table. 8. Produce a debate/argument (one or more sides).	9. Produce a Panel Discussion / Conversation / Meeting / Q&A session.(A) Participate(B) Moderate/MC	10. Produce a new text of a different type using the same data (essay-debate - flowchart-story)	11. Produce a proposal, offer, or plan (with step by step instructions / agenda). 12. Produce a schedule + prioritizing, valuation	13. Produce a critique, criticism, or suggestion: To(A) make a change (B) accept/reject, or start/stop.

Modes/Forms 3: More Forms, Produce a(n)... | Modes/Forms 4: Produce a(n)... [Creative, Subtle & Cultural, Artistic]

Modes/Forms 3: More Forms, Produce a(n)...				Modes/Forms 4: Produce a(n)... [Creative, Subtle & Cultural, Artistic]			
14. Email or Letter 15. Story	16. a textbook explaining the material 17. a plan of instruction (lessons)	18. Hypothesis to test 19. Thesis to support/ explain / fail to disprove	19. vote/ election/ plebiscite 20. underlying code/script	21. Picture / Painting	22. Song 23. Music	24. Dance 25. Poem	26. Sculpture, Architecture, Landscaping, Flower-Arranging, Interior-Decoration, Design,Clothing/Costume-Design

Reporting Skills: Produce a(n)...(For emails, essays, paragraphs, technical reports, presentations, lectures, events, etc.) | Product / Service

Reporting Skills: Produce a(n)...(For emails, essays, paragraphs, technical reports, presentations, lectures, events, etc.)						Product / Service
1. Introduce / Open (main part, sub-part,self) * 2.Body: ideas+ supporting points	3. Conclude (sub-topics, main sections) * 4. Transition (sub -topics, main sections) *	5. Q&A	Proper delivery form: - voice: volume, intonation, speed (clear) - body language: posture, arms-hands - eyes: eye contact, not read	Produce quesions and answers about specific types of significance*	Produce slides, props, or aids, for a presentation. e.g. file.ppt (multi-media) + figures-charts-graphs-data-tables	1. Produce a (final/complete) product (good or servic)

* See appendix 1 for all parts of intro, conclusion, Q&A, and types of significance.

Group & System Skills (Done by Groups of Participants) (using models) 0. Do any other benchmark with a group.

1. Teach or explain to another member in a group. (Produce the service of instruction.)	2. Disassemble into parts (Produce a set of separate parts from the original whole text/model.)	3. Assemble from parts. ([Re]Produce the text/model as assembled from parts.)	4. Produce a change: Modify or change + by changing the underlying framework	5. Identify and Repair a defect in the text/model. (Produce a repaired text/model.)	6. Succession & Transition: Produce something smoothly across a transition in ___ : 1. roles 2. target goal 3. schedule 4. materials/media/content 5. whole groups of people who are doing the project 6. code/law/procedure 7. policy	7. Produce (an identification of) biases or distortions: E.g. biases caused by a model or method that interferes with a groups' perception or communication.

Functions, Operations & System Patterns

1	2	3	4	5	6	7	8
Yes/No	And/Or/Neither/both logical: NOR, NAND +not, if, while, etc.	"generalized recombination of model-elements" (Transferable/ Transference)	confirm / fail to confirm or disprove/fail to disprove	identify stage in development process (R&D pyramid, ~sci method)	quanitizing basal vs. distal scale	catagory of type of system	
Wait/Respond (sink/source)	if, then, because; causality/correlation					system id	
Direct/Indirect	probability - more or less likely				phyletics cross-type	disturbance regimes	

Notes: 1. These production-goals are neither dependent on nor achieved by having a vast knowledge of grammar and vocabulary.

2. Often tasks do lend themselves to one or more rudimentary sets of words. (e.g. "How about" is enormously flexible.)

3. There is no clear general (context free) "level-system" or "hierarchy," outside of a given a specific context or application.

4. This set of tasks overlaps, if not in a simply-organized way, with "areas of learning," "parts of understanding" & "types of learners."

5. This framework assumes that there is no automatic transference of skill between any areas. "General" "understanding" is not automatic.

6. To start out: Which skills should be done? Out of those, which can't the students do? Out of those, in what sequence do you do them?

7. These are whole areas of real life task performance, without getting into the philosophical and semantic problems of not knowing what is happening inside those wholes. The focus is on whether a person can do these things or not.

8. The term "critical thinking" often involves many unintended ambiguities and problematic assumptions and definitions. The above criteria neither confront nor deny problems with understanding mind, consciousness, and thought - for example our inablity to demonstrate that they exist at all.

9. This can be used to agree on or frame school standards: e.g. A school cannot graduate a student who cannot produce (however poorly) all of these outputs. "What can they do?": However much litanies of miscellany may assist performance, no quantity or quality of miscellany can replace output.