**Handout G: Some Direct and Indirect Assessment Methods, including the Use of Technology**

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**Direct Methods: Products**

* Test of knowledge of facts, processes, procedures, concepts, etc.
* Case Study/Problem that requires students to demonstrate how one has integrated outcome-based learning into his or her work
* Chronological use of a case study at significant points in your curriculum to assess students’ abilities to transfer and apply new knowledge, concepts, etc., to a complex, muddy problem
* Student summary from homework assignment; student summary after a segment of lecturing or other pedagogical method
* Description of what one already knows before movement into a new topic or focus
* Group work that emerges from material covered with self-analysis and analysis of others
* Team projects that emerge from material covered
* Student self-reflection on what student does and does not understand or on what student has learned
* Written assignment that explores a distinctive critical perspective or problem
* Critical incident response
* Representative disciplinary or professional work assignments
* Capstone Project that positions students to integrate learning
* Smaller Projects over Time that Lead to a Final “Capstone Project”
* Thesis
* Research Project
* Situated Experiences along the Chronology of Learning
	+ Community-based projects (research) launched in the first year
	+ Internships
	+ Experiments
	+ Research launched in the first year to solve a relevant problem
	+ Research with faculty beginning in first year
	+ Solo or team projects launched in the first year
	+ Co-designed projects with a mentor or mentors (curricular-co-curricular projects, for example)
* Interpretation of unidentified pieces of discourse or artifacts to ascertain how well students can make inferences about when documents or artifacts were written or created and about the beliefs or concepts that underlie each artifact or document
* Event analysis
* Interpretation of video clips or visual materials
* Debates
* Case study or studies examined over time as students move through courses and educational experiences (provides evidence of learning over time)
* Oral examination
* E Portfolio—collection of student work based on selected assignments in the curriculum
* Concept, knowledge or process maps (visual representation)
* Concept inventories, such as in physics and in chemistry
* Knowledge surveys
* Agreed upon embedded assignments or common assignments you will sample such as in a final examination
* Writing, to speaking, to visual presentation
* Case study with analysis—use of parallel case studies over time
* Self-reflective writing—especially useful after students have received feedback or have engaged in a sub-task or task
* Externally or internally reviewed student projects
* Locally developed tests or other instruments
* Standardized exams
* Problem with solution and ask for other solutions
* Mining of data such as learning objects at Merlot: students make inferences about original work from a particular period of time, such as from literature, painting, letters and other historical documents
* Observation of a debate (particularly useful for a focus on ethical issues)
* Virtual simulations
* Milestone exams
* Complex problems that can be approached from many perspectives or disciplines
* Revisiting a problem over time to track learning
* Knowledge, decision, or procedural maps <http://classes.aces.uiuc.edu/aces100/> mind/c\_
	+ Visualization or representation of a problem, issue, situation
* Chronological Use of Complex Problems that necessitate the integration of Quantitative Literacy, such as “the ability to discriminate between good and bad data or development of the disposition to use quantitative information to think through complex problems—these are capacities that educators across fields should be helping students develop.” From: Burke, Michael C. (October, 2007). “A Mathematician’s Proposal.” *Carnegie Perspectives*. www.carnegiefoundation.org/perspectives/sub.asp?key=245&subkey)

**Direct Assessment Methods via Technology**

* Team work across media (digital media and interfaces) and modes of communication
* Authorship of a simulation or a webpage
* Performance in virtual environments—virtual reality
* Data mining online
* Creation of wikis
* Podcasts
* Clickers to assess transfer of or new application of learning
* Online exercises
* Online journals

 **Direct Methods that Focus on Process**

* Interactive computer simulated tasks that provide data on patterns of actions, decisions, etc. (for example, eCollege claims it provides these kinds of data); Intelligent Technology
* Gaming accompanied with one’s analysis
* Threaded discussions online
* Logbook or journal tasks that explore concepts or problems or situations over time or explore learning against pedagogy such as interactive simulations
* Discussion of how one may have changed his or her understanding based on learning more about a topic or engaging in research on a topic
* Think Alouds
* Results of flipping classrooms (observe students solving problems or appoint a group leader to identify obstacles students confronted)
* E-portfolio entries that discuss what specific work demonstrates about a student’s learning or development over time.
* Examination of places within e-portfolios, such as students’ Personal Learning Environments, where students store and record results of research such as through “tagging.”
* Observations of interactions, decision making, simulations
* Analysis of Word Edit Bubbles
* 360 Degree classrooms in which students project their work in progress
* Intelligent Adaptive Technology programs

**Indirect Methods of Assessment**

* Surveys, questionnaires
* Interviews
* NSSE
* SALG: Student Assessment of Their Learning Gains: [www.salgsite.org](http://www.salgsite.org)
* SGID—small group instructional design

**Institutional Data That May Provide Additional Evidence**

* Course-taking patterns

* Audit of syllabi
* Engagement in co-curricular programs
* Other for your institution?