| Assessment Tools | | What kind of data?<br><br>Direct or Indirect<br><br>Qualitative or Quantitative | What sophistication of thinking does this assess ?<br><br>**Bloom's Taxonomy** - Knowledge, Comprehension, Application or Analysis/Synthesis/Evaluation<br><br>**Webb's Depth of Knowledge** – Recall, Basic Application, Strategic Thinking, Extended thinking | | |
|---|---|---|---|---|---|
| **Assessment Tool** | **Definition** | | | **Benefits** | **Challenges** |
| Multiple Choice Exam | Multiple choice testing assesses knowledge based on the correct selection of given potential answers. This usually evaluates direct recall and some application in the lower levels of Bloom's taxonomy, but some complex multiple choice questions test more sophisticated thinking. Creating good questions is complex. Publisher's test banks are usually not aligned with specific course outcomes. | D<br><br>Quant | | easy to grade<br><br>objective<br><br>covers a lot of content or material | reduces assessment to provided answers<br><br>often simplistic and low level<br><br>this type of testing favors a single learning style over others |
| Licensing Exams | There are licensing exams required for numerous professional licenses. These exams are officially administered by particular boards or professions on specific content and knowledge and are  usually multiple choice. Because these exams define a minimum qualification, it is appropriate to have formative assessments simulating these types of exams in a course.<br><br>Examples: NCLEX (nursing), X-Ray Board Exams, ASE Automotive Service Excellence Exam, CNA - Certified Nursing Assistant, EMT - Emergency Medical Technician | D<br><br>Quant | | easy to score<br><br>allows comparisons among students and across programs and colleges<br><br>should be included in any program assessment involving a terminal licensing exam for employment | not  authentic testing<br><br> may outdate<br><br>often has content validity problems may minimize or simplify actual knowledge<br><br>this type of testing favors a single learning style over others |
| Standardized Cognitive Tests | Standardized cognitive tests are developed and administered at a cost by educational testing companies.<br><br>These tests are generally multiple choice and are nationally normed.  These tests often assess reading writing, math, grammar, vocabulary. Additionally, there are major field tests that may be used to assess student learning in the major. Examples include: GRE, SAT, LSAT, MCAT, Miller's Analogies, Stanford-Binet etc | D<br><br>Quant | | comparable between students | heavily dependent on exposure to topics on test  sp content validity is a concern<br><br>this type of testing favors a single learning style over others |

# Assessment Tools

| Assessment Tool | Definition | What kind of data? Direct or Indirect / Qualitative or Quantitative | What sophistication of thinking does this assess ? Bloom's Taxonomy - Knowledge, Comprehension, Application or Analysis/Synthesis/Evaluation / Webb's Depth of Knowledge – Recall, Basic Application, Strategic Thinking, Extended thinking | | |
|---|---|---|---|---|---|
| | | | | Benefits | Challenges |
| [Checklists](Checklists) | A checklist basically determined by criteria or primary traits necessary for a given outcome. Checklists are good for simple psychomotor skills or low level recall | D  Quant | | very useful for skills or performances  students know exactly what is missing | can minimize large picture and interrelatedness  evaluation feedback is basically a yes/no - present/absent - without detail |
| Essay | A short literary or narrative composition on a single subject, concerning a particular thesis, supported by evidence. This could be assigned within any particular rhetorical mode (e.g. argumentative, informative, definitive, etc) and within any discipline. | D  Qual & Quant | | displays analytical and synthetic thinking well  allows assessment of student's writing and thinking ability | time consuming to grade  can be subjective without a rubric  artifacts may be influenced by plagiarism |
| Comprehen-sive factors list | In this assessment the student is required to list any and all factors pertinent to a given outcome, event, illustration, article or performance.. | D  Qual & Quant | | displays ability to identify wide-ranging aspects of a given concept | must be well-defined to be manageable and reduce irrelevant guessing and/or volumes of factors |
| [Case Study](Case Study) | Case studies use an "in situ" approach to simulate real life situations and problems. The National Center for Case Study Teaching in Science is a good example of pre-packaged assessments and assignments that can be adapted in a variety of courses http://ublib.buffalo.edu/libraries/projects/cases/case.html  Engineering case studies http://www.civeng.carleton.ca/ECL/  Ethics case studies http://ethics.sandiego.edu/resources/cases/HomeOverview.asp | D  Qual & Quant | | displays analytical and synthetic thinking well connects other knowledge to the topic  displays critical thinking and analytic ability | Initially creating the case study is time consuming  results may test student knowledge from multiple areas  not necessarily from a particular program of study |

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|---|---|---|---|---|---|---|
| **Assessment Tool** | **Definition** | | | | **Benefits** | **Challenges** |
| Debate | Debate is a competitive assessment where students must take a position and argue their thesis against the opposing position. This type of assessment involves numerous high level thinking skills and requires planning and participation on the part of the student. Debates can be done individually or in teams. | | D Qual & Quant | | provides immediate feedback to the student reveals thinking and ability to respond based on background knowledge and critical thinking ability involves listening and responsiveness as well as output | requires a good grading rubric more than one evaluator is helpful difficult for ESL students stressful for students takes course time usually ends up with a winner and a loser - competition |
| Problem Solving | Problem solving uses the same approach as case studies but may leave more developmental problem solving to the student. For instance, the student must develop the experiment or tests to obtain data. Rice University has a great collection of these. http://www.ruf.rice.edu/~lane/rvls.html University of Delaware has sample problems http://edweb.sdsu.edu/clrit/learningtree/PBL/webassess/WebAssessmentHome.html Samford University has a website describing PBL - Problem based learning http://www.samford.edu/pbl/definitions.html SDSU has a site on assessing problem based learning http://edweb.sdsu.edu/clrit/learningtree/PBL/webassess/WebAssessmentHome.html | | D Qual & Quant | | displays analytical and synthetic thinking well authentic if real world situations are used reveals thinking and ability to respond based on background knowledge and critical thinking ability | difficult to grade due to multiple methods and potential multiple solutions these must be loosely structured to allow maximum creativity on the part of the student |

# Assessment Tools

| | | What kind of data? Direct or Indirect — Qualitative or Quantitative | What sophistication of thinking does this assess ?<br><br>**Bloom's Taxonomy** - Knowledge, Comprehension, Application or Analysis/Synthesis/Evaluation<br><br>**Webb's Depth of Knowledge** – Recall, Basic Application, Strategic Thinking, Extended thinking | | |
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| **Assessment Tool** | **Definition** | | | **Benefits** | **Challenges** |
| Oral Speech or Oral presentation | Oral presentation assess numerous aspects of learning including communication and specific content skills.<br><br>Well defined oral presentations that involve research and analysis also allow faculty to assess information competency within a particular discipline. | D<br><br>Qual & Quant | | easily graded with rubric<br><br>allows other students to see and learn what each student learned<br><br>connects general education goals with discipline-specific courses | difficult for ESL students stressful for students takes course time<br><br>must fairly grade course content beyond delivery |
| Oral Examination | Oral examinations usually involve questioning a student concerning individual mastery of a particular topic. The questions are generally open-ended or involve identification of particular items. Depending upon the type of questions asked ,this assessment has potential to reveal numerous areas of content mastery and critical thinking. | D<br><br>Qual & Quant | | allows students to really express what they know<br><br>does not favor particular learning styles<br><br>can simulate real world experiences very well | requires a lot of time if done individually<br><br>equally difficult and fair questions for all students is challenging<br><br>must have rules and boundaries for responses |
| Product Creation, Special Reports or Poster sessions | This assessment requires students to use the knowledge from a learning experience to create a product displaying that learning.<br><br>Simulates real world or academic outcomes and expectations. | D<br><br>Qual & Quant | | students can display skills. knowledge, and abilities in a way that is suited to them<br><br>allows creativity<br><br>requires research and analysis | must have clearly defined criteria and evaluative measures<br><br>"the look" can not over-ride the content |
| Thought Balloon | In this assessment a particular situation, reaction, or thesis statement is analyzed from other people's perspectives, not the student's own. The student must analytically determine what someone else's conclusions or thoughts about an issue are and draw a thought balloon to illustrate what someone else is thinking. | D<br><br>Qual | | involves student ability to understand diverse perspectives<br><br>assesses critical thinking and analysis | may unwittingly create opportunity to biased responses<br><br>requires well-defined assignments |

| Assessment Tools | | | What kind of data? Direct or Indirect  Qualitative or Quantitative | What sophistication of thinking does this assess ?  **Bloom's Taxonomy** - Knowledge, Comprehension, Application or Analysis/Synthesis/Evaluation  **Webb's Depth of Knowledge** – Recall, Basic Application, Strategic Thinking, Extended thinking | | |
|---|---|---|---|---|---|---|
| **Assessment Tool** | **Definition** | | | | **Benefits** | **Challenges** |
| [Flowchart or Diagram](#) | A flowchart is a visual or graphic illustration of a process or system used to solve a problem or produce a product. Cognitive researchers have said that placing information in a flowchart or diagram represents one of the highest levels of cognitive achievement requiring analysis and synthesis of many concepts. Flowcharts are excellent ways to communicate the logic involved in a system; students must recall the appropriate information and associated content but must also analyze how the components fit with the entire system or process. Flow charts allow students the opportunity to gain confidence in their ability to describe the entire system or process. These assessments can be assignments or on the spot assessments. | | D  Qual & Quant | | displays original synthetic thinking on the part of the student  a good way to display overall high level thinking and articulation abilities when numerous factors are involved  short bullet points or statements allow more information to be shared | directions must be very clear  more difficult to grade, requiring a checklist or rubric for a variety of different and sometimes unexpected answers  difficult for some students to do on the spot  does not allow writing proficiency assessment |
| Cause and Effect Diagrams e.g. Fishbone | Cause and effect diagrams assess the student's ability to display relationships. The assessment may start with a cause and work forward or with an effect and work backwards. Students should always be reminded not to over-simplify causal relationships and always to think about other relationships and possibilities, not just the most obvious. | | D  Qual & Quant | | displays a variety of causes that relate to a given outcome requires evaluative and synthetic critical thinking  expansive and inclusive  allows comprehensive assessment of understanding  works best with groups relying on collaborative thinking | requires time  assessment must allow creative thinking; eliminating simple right wrong answers  teamwork may involve complications |
| Significant events analogy | Students are required to describe a real life situation that illustrates key concepts, policies, outcomes or principles as an analogy to something within their realm of experience | | D  Qual | | Allows students to scaffold knowledge  Helps long term retention | directions must be very clear  requires adequate grading techniques |

| Assessment Tools | | | What kind of data?<br>Direct or Indirect<br><br>Qualitative or Quantitative | What sophistication of thinking does this assess ?<br><br>**Bloom's Taxonomy** - Knowledge, Comprehension, Application or Analysis/Synthesis/Evaluation<br><br>**Webb's Depth of Knowledge** – Recall, Basic Application, Strategic Thinking, Extended thinking | | |
|---|---|---|---|---|---|---|
| **Assessment Tool** | **Definition** | | | | **Benefits** | **Challenges** |
| Portfolios | Portfolios were developed based upon the art portfolio model that displays the student's abilities through a collection of artifacts. Portfolios are a collection of student artifacts over a period of time. Many institutions use portfolio projects to assess development and change over time. Portfolios benefits student metacognitive growth and result in a resume-like product which students can use beyond their schooling. Some institutions use electronic student portfolios that are commercially available (see links to the right).. Instructions to the students must be explicit, based upon the purpose and uses of the portfolio. Sample electronic portfolios. http://webcenter1.aahe.org/electronicportfolios/index.html<br>Sample of a digital portfolio for students http://www.hpcnet.org/upload/attachments/TheDAT_392877_20031103082323.doc<br>Numerous samples of portfolios for student grading are found at http://www.aahe.org/teaching/pfoliosearch3.cfm | | D<br><br>Qual & Quant | | provides the students with a clear record of their work and growth<br><br>best evidence of growth and change over time<br><br>students can display skills. knowledge, and abilities in a way that is suited to them promotes self-assessment | portfolios are time consuming to assess, requiring time outside the normal faculty load<br><br>different content in portfolios makes evaluation difficult and may require training or norming<br><br>the artifacts are bulky to manage, store and transport, depending on size<br><br>"the look" can not over-ride the content |
| Peer Review | Peer review has been used very well in art and performance courses for a long time. This method of assessment simulates the "real world" exposing students to the kind of critiques and feedback they would get as an artist or performer. It is essential that a rubric with specific criteria be used for responses and that the rubric is aligned with the appropriate goals and levels of expectation. | | D<br><br>Qual | | students learn to receive and respond to criticism, as well as how to give it.<br><br>valuable to the student being critiqued as well as those making the critique. | students must have adequate knowledge and self-confidence to evaluate and critique<br><br>the expectations of the faculty must be very clear<br><br>the faculty member must determine how the critique will inform the final assessment |

| Assessment Tools | | What kind of data? Direct or Indirect Qualitative or Quantitative | What sophistication of thinking does this assess ? **Bloom's Taxonomy** - Knowledge, Comprehension, Application or Analysis/Synthesis/Evaluation **Webb's Depth of Knowledge** – Recall, Basic Application, Strategic Thinking, Extended thinking | | |
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| **Assessment Tool** | **Definition** | | | **Benefits** | **Challenges** |
| Internships, Field Experiences Clinical Evaluations | This is usually seen as an activity or experience rather than an assessment. However, if adequate evaluations of the experience and the performance of the student with regards to specific outcomes, skills or work are conducted, this becomes an extremely powerful assessment as well as a learning experience. | D, I Qual & Quant | | students report that this provides the best learning and personal assessment of their abilities simulate real world experiences | time consuming to set up evaluations that are competed by key participants are essential liability issues may be a concern |
| Exit Surveys | These surveys are conducted to assess student perceptions of a course, program or institution following a learning experience. | I Qual & Quant | | provides good summative data easy to manage data if Likert-scaled responses are used | Likert scales limit feedback, open-ended responses are bulky to manage, |
| Performance | Assessment of student performance provides a unique opportunity to assess skills and abilities in a real-time situation. While performance assessment appears a natural tool for fine arts, it has also been used in the humanities in the form of debates or re-enactments. "High-quality performance as a goal, whether at the course or program level can make the curriculum more transparent, coherent, and meaningful for faculty and students alike. Clarity and meaningfulness, in turn, can be powerful motivators for both faculty and students, particularly if the performance is a public one. And public performances provide models for other students" (Wright, 1999). | D Qual & Quant | | provides best display of skills and abilities provides excellent opportunity for peer review students can display skills. knowledge, and abilities in a way that is suited to them | stressful for students may take course time some students may take the evaluation very hard - evaluative statements must be carefully framed performance assessments require well-designed instruments, criteria, rubrics, and norming between reviewers |
| **Journals** | Journals or learning logs are used as a tool for increasing student writing and motivation for writing and for assessing students' writing skills. Journals focused on students' educational goals and values are useful for institutional assessment. | D, I Qual | | provides students longitudinal perspectives reflects student growth over time | students must value the process time consuming to evaluate difficult data to collect & report |

| Assessment Tools | | | What kind of data?<br>Direct or Indirect<br><br>Qualitative or Quantitative | What sophistication of thinking does this assess ?<br><br>**Bloom's Taxonomy** - Knowledge, Comprehension, Application or Analysis/Synthesis/Evaluation<br><br>**Webb's Depth of Knowledge** – Recall, Basic Application, Strategic Thinking, Extended thinking | |
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| **Assessment Tool** | **Definition** | | | **Benefits** | **Challenges** |
| Capstone project or course | A capstone is defined as a culminating event or crowning achievement. Capstone Courses or Projects are high stakes courses or projects integrating multidisciplinary education with a problem or course. Some institutions have developed capstone courses for programs which integrate an entire sequence of study. Capstone courses, where the course itself is an assessment instrument, provide unique and challenging opportunities for students to integrate and demonstrate their knowledge, skills, and abilities. Capstone courses provide ample and focused formative time to synthesize and cement specific skills and competencies. Capstone courses are a significant learning experience as well as a powerful assessment tool.<br>Example of capstone projects in General Education<br>http://genedhonors.binghamton.edu/projdes.html<br>Capstone Course in Education<br>http://www.wgu.edu/wgu/smartcatalog/class_description.asp?course_key=7033<br>Sample Capstone Projects<br>http://www.unomaha.edu/~wwwpa/project/prevsemesters.html | | D<br><br>Qual & Quant | best method to measure growth overtime with regards to a major, course or program.<br><br>capstones assess cumulative knowledge, skills and abilities better than a single assessment or a licensing exam.<br><br>designed to evaluate synthesis and integration across a course of study, major or program. | adequate focus and breadth of assessment are important<br><br>understanding all the variables to produce assessment results is important e.g. potential external variables.<br><br>capstones should be aligned and coordinated with criteria or standards for the breadth and depth of the course of study |
| Team Project | This is another term for collaborative projects, either within the course, in conjunction with other courses, or with community partners. It uses collaborative learning to assess multiple levels of understanding and application. Many of the assessments above can be conducted in teams or collaboratively. There is, however, a difference between collaborative and cooperative assessments. | | D | connects general education goals with discipline-specific courses<br><br>see<br>http://www.cpcs.umb.edu/partners_projects/partners_projects_collaborations.htm | must fairly grade individuals as well as team<br><br>fair grading for all participants may be complicated<br><br>student interaction may be a challenge |

| Assessment Tools | | | What kind of data? Direct or Indirect Qualitative or Quantitative | What sophistication of thinking does this assess ? **Bloom's Taxonomy** - Knowledge, Comprehension, Application or Analysis/Synthesis/Evaluation **Webb's Depth of Knowledge** – Recall, Basic Application, Strategic Thinking, Extended thinking | | |
|---|---|---|---|---|---|---|
| **Assessment Tool** | **Definition** | | | | **Benefits** | **Challenges** |
| Reflective self-assessment essay | These types of essays ask the students to assess their own growth and development using evidence to support their conclusions. Correctly structured, student self-assessment can provide insight into affective development and metacognitive growth that other assessment can not. "Self-assessment is a method that allows -indeed forces-students to take stock of and analyze their own learning. As such, it can be not only an evaluative tool but an educational process in its own right." Wright 1999 | | D, I | | provides invaluable ability to evaluate affective growth in students can provide powerful information that can not be accomplished by any other means of assessment | the rubric to evaluate the self assessment should be explicit students should provide evidence of any conclusions they make; this may include artifacts to support these conclusions. |
| Satisfaction and Perception Surveys | There are numerous commercial standardized surveys available to gather data on student, faculty, staff, employer, and community satisfaction or perceptions. Examples are the CCSSE and NSSE on student engagement Noel-Levitz SSI (Student Satisfaction Inventory) CSEQ College Student Experiences Questionnaire | | I Qual or quant | | provides good indirect data data can be compared longitudinally can be used to determine outcomes over a long period of time | respondents may be influenced by factors other than those being considered validity and reliability most be closely watched occasionally over-relied upon by student services |
| **Focus Groups** | A focus group is a directed population sample where small-group discussion is used to elicit qualitative responses beyond that of a survey. in-depth qualitative information. Individuals are specifically invited to participate in a discussion focused on a, usually no more than three to five. The discussion is informal as participants are encouraged to talk with each other about their experiences, preferences, needs, observations, or perceptions. | | | | surveys with Likert scaled answers provide quantitative data but lack some important direction for improvement focus groups provide answers the evaluators may have never considered | must restrict topics and carefully guide discussion data collection techniques are essential as to not over-emphasize individual responses getting the people to meet together may require some incentive moderator role and ability is essential |

Flowchart or Diagram

A flowchart is a visual or graphic illustration of a process or system used to solve a problem or produce a product. Cognitive researchers have said that placing information in a flowchart or diagram represents one of the highest levels of cognitive achievement requiring analysis and synthesis of many concepts. Flowcharts are excellent ways to communicate the logic involved in a system; students must recall the appropriate information and associated content but must also analyze how the components fit with the entire system or process. Flow charts allow students the opportunity to gain confidence in their ability to describe the entire system or process. Follow-up case study questions concerning the system or process, involving potential problems or adaptations, allow the students to use the flowchart to evaluate system changes.
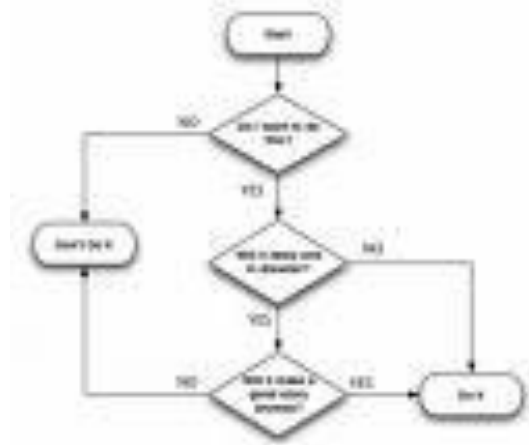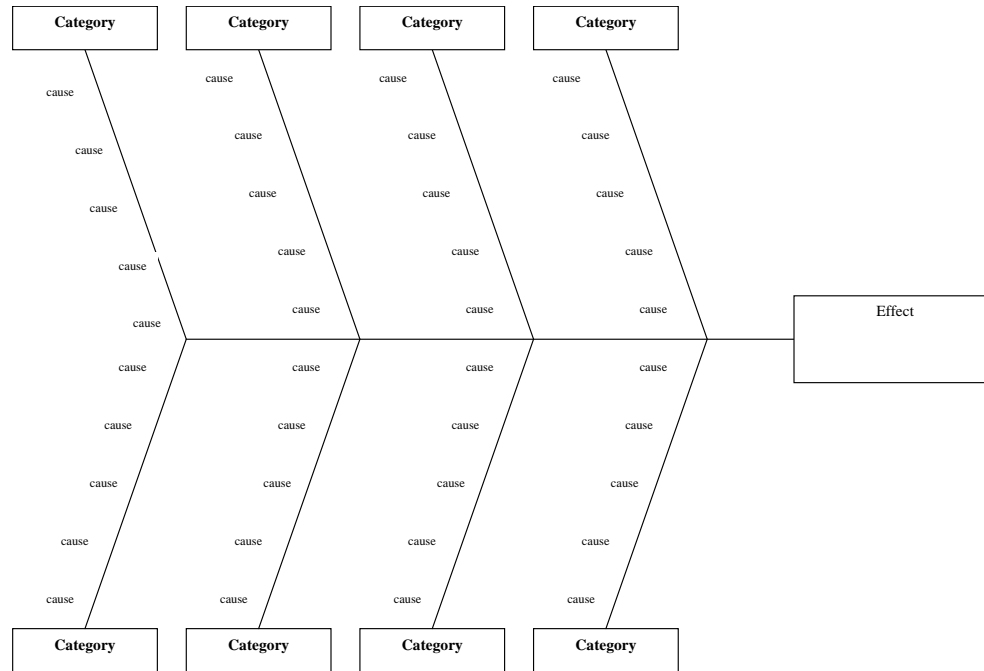
Directions for this type of assessment must be very specific.

1. Describe a process using a flowchart or diagram. A flowchart is a visual or graphic illustration of a process or system used to solve a problem or produce a product.
2. Chart the process the way it really occurs.
3. Prepare a single lined title for the flowchart or diagram that adequately describes the process being described.
4. Begin with an event that initiates the process.
5. Record each succeeding action or reaction clearly identifying its relationship to the process.
6. Use standard symbols for reoccurrences
7. If multiple stimulators or multiple consequences occur, try to include these.
8. Make notes or reference anything that needs explanation and any assumptions that are not evident.
9. Determine and end point or whether the process is cyclic and draw it in this way.
10. Run through the flowchart to be sure you have not left anything out and that it flows in the way you have drawn it.

W.E. Deming, the quality guru is reported to have said, ""Draw a flowchart for whatever you do. Until you do, you do not know what you are doing, you just have a job." In the same way we might tell our students to draw a flow chart, until they do they have only memorized factoids.

Fishbone Diagram

| Category | Category | Category | Category |
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| Category | Category | Category | Category |
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Author, Page Number, Date

Reflective Self-Assessment Essay

These types of essays ask the students to assess their own growth and development using evidence to support their conclusions. An example of this kind of essay is given below. This essay is from a multidisciplinary capstone class in Advanced Composition and Critical Thinking taught by four instructors at Bakersfield College. The assignment is

Topic:  Discuss your development as a writer this semester.

Audience:     All four instructors

Due Date:     16 May 2002 at the beginning of class

Points:          100

Format:          MLA format

Prewriting Process:

1. Carefully reread all of your writing assignments for this class.

2. Choose the one you feel is the strongest.  List the reasons.

3. Choose the one you feel is the weakest.  List the reasons.

4. Characterize yourself as a writer and as a thinker, referring to any work you have done for this class.

5. Which parts of the class were most helpful?  Why?  Which parts need to be improved?  Why?

Using your answers to questions 2-4 as a basis for your essay, discuss your development as a writer this semester.  Answer question 5 on separate page(s).

In addition to your final essay, turn in the following:

Initial Baseline Essay paper

Strongest paper

Weakest paper

Answers to the Prewriting Process questions (2-5).

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Checklist

A checklist basically determines whether a criterion is present or not, in contrast to how well or at what performance level. Checklists are good for simple psychomotor skills or low level recall.

| Hand washing Checklist | ✔ |
|---|---|
| Adjusted to appropriate water temperature | |

| | |
|---|---|
| Hands wetted | |
| Soap applied | |
| Lather worked-up | |
| Applied cleansing friction of at least 20 seconds | |
| Applied friction between fingers | |
| Applied friction on back of hands | |
| Used fingernail brush for nail beds | |
| Rinsed off all soap | |
| Dried appropriately | |