Introduction to Problem-Based Learning

A workshop session at Dokuz Eylül Üniversitesi
June 26-27, 2006

facilitated by
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Institute for Transforming Undergraduate Education

University of Delaware

Handouts for Day 4
Group Dynamics

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Session Objective

To explore and discuss strategies an instructor can use to maintain functional groups in the classroom

Collaborative Learning

Informal
- Short term
- Impermanent
- Ad hoc

Examples:
- Think-Pair-Share
- Minute papers
- Concept testing

Formal
- Longer activities
- Permanent groups
- Instructor assigned

Examples:
- Jigsaw groups
- Presentations, debates
- Problem-, project-based learning

Five Elements of Cooperative Learning

- Positive interdependence
- Individual accountability
- Promotive interaction (face-to-face)
- Use of teamwork skills
- Group processing

Why Use Groups?

- Committed to it based on research and observation*
- Simulates the “real world” - use of teams
- High motivation when actively involved
- Learn more fully and with less effort
- Learn in context

Getting Started

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Suggestions for Getting Started

• Explain why learning in groups is a good strategy.
• Ask students to report on past experiences.
• Talk about support mechanisms.
• Use group warm-up activities.

Suggestions When Forming Student Teams

• Instructor-selected vs. Student-selected teams?
• Strive for heterogeneity across
  – Gender
  – Country of origin
  – Major
  – Expertise
• Avoid the “fifth wheel” syndrome
• Give students the opportunity to opt-out within a certain amount of time

Interesting Activities to Do with Groups

• Use your imagination!
• Consider methods for forming and reforming groups
• What roles can students play within their groups? Should these be rotated?
• Technology can enable new opportunities, including cross-class and virtual teams

Interesting Activities to Do with Groups

• Use your imagination!
• Consider methods for forming and reforming groups
• What roles can students play within their groups? Should these be rotated?
• Technology can enable new opportunities, including cross-class and virtual teams

Rotating Roles

Discussion Leader
Keeps group on track; maintains full participation

Recorder
Records assignments, strategies, unresolved issues, data; convenes group outside of class

Reporter
Reports out during whole class discussion; writes up final draft of assignments

Accuracy Coach
Checks group understanding; finds resources

Jigsaw Group Scheme

4 home groups, with 4 members each
4 new expert groups, with one representative from each home group

Dealing with Conflict

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Handle Conflict Before It Starts

- Set the stage early
- Form heterogeneous groups
- Use permanent groups
- Rotate roles of responsibility
- Rely on group-selected ground rules
- Conduct peer evaluations

Examples of Ground Rules

- Come to class on time every day
- Come to class having done the assignment and prepared to discuss it
- Must notify members of the group ahead of time if must miss class for any reason
- Be willing to share information
- Respect the views, values, and ideas of other members of the group

If members of the group violate these ground rules, other members of the group may impose the following consequences:

Peer Evaluation

Some general suggestions:

- Use predetermined written criteria that focus primarily on behaviors
- Do at least 2X per semester
- Factor results into students’ grades
- Summarize results and distribute summaries
- Keep the process simple
- Incorporate into group assignments

Recommendations for Evaluating Student Performance

- Focus questions on observable behaviors, not generalized assessments
  - Good: The team member had a positive attitude toward this project.
  - Questionable: The team member was a good performer
- Student perceptions of other’s behaviors are relevant; their assessment of another performance may be less valid.

Other Suggestions

- Incorporating lessons on how effective teams function
- Have teams exchange contact information at the start of class
- Group members should dedicate specific times for group meetings and projects
### Assessment of Individual Performance in Groups

**Name of Person You Are Assessing:** [Insert Name]

**Your Name:** [Insert Name]

**Group Name:** [Insert Name]

For each of the assessment categories below, place an "X" in the box that best indicates the extent to which you think that statement describes the person you are assessing. Fill one out for each member of your group and one for yourself. Forms are due at the start of class on the date given in the syllabus.

<table>
<thead>
<tr>
<th></th>
<th>strongly disagree</th>
<th>disagree</th>
<th>somewhat agree</th>
<th>agree</th>
<th>strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Does not miss out on group activities by being absent.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>2.</td>
<td>Does not miss out on group activities by being late.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>3.</td>
<td>Finishes all jobs assigned by the group on time.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>4.</td>
<td>Comes to class having read the material necessary for advancing group discussion.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>5.</td>
<td>Listens well to others' presentations.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>6.</td>
<td>Contributes to the group's discussion.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>7.</td>
<td>Does not dominate the discussion.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8.</td>
<td>Brings new and relevant information to the group's discussion.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>9.</td>
<td>Uses appropriate resources for researching presentations.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>10.</td>
<td>Presents logical ideas and arguments.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>11.</td>
<td>Asks questions that promote clearer and deeper understanding.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>12.</td>
<td>Communicates ideas and information clearly.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>13.</td>
<td>Helps to identify and implement ways that the group can function better.</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Please circle an overall rating:

1. **Excellent** - Exceeds expectations
2. **Good** - Meets expectations
3. **OK** - Improvement in some key areas needed
4. **Major improvement needed**

Please use the back of the form to respond to the following two statements. Link your responses to the ratings above as appropriate.

1. Describe the ways in which this individual most helps your group's learning.
2. Describe the ways in which a change in this person's behavior could improve your group's learning.

Borrowed from Deb Allen (Biological Sciences) website for BISC2078 at the University of Delaware. "http://www.physics.udel.edu/~watson/scen103/colloq2000/groupevals.html"

© Deb Allen, Univ. of Delaware, 2000.
**Why Should Students Use Collaboration Software?**

- Students are “teamed to death”
- More students are working and are constrained in their available time
- Organizations are using this systems to manage knowledge
- Helps them organize their projects
- Easy to use
- *All covered systems assume students are geographically dispersed*

**Why Should You Use Collaboration Software?**

- Students post their assignments in one location
- Integration of Office makes grading easier: No downloading projects
- Less student frustration

**Synchronous versus Asynchronous**

- Synchronous—Instant Messaging, NetMeeting
  - “Same Time” interaction
  - Best uses
    - Final editing of documents
    - Brainstorming
    - File exchange
- Asynchronous—SharePoint, WebCT, Blackboard, Wikis
  - “Different Time” Interaction
  - Best Uses
    - Development of project deliverables over time
    - Project repository—project files, time tables, assignments
    - Gradual development of project ideas

**SharePoint**

- Included with Windows Server 2003
- Microsoft’s new Team Initiative
- You probably already have the software!

**SharePoint: the Good and Bad**

- © Setting up and configuring SharePoint will probably require the assistance of your network admin
- © You will need a server, but it doesn’t require a lot of power
  - Mine: 930 MHz, 512 MB RAM for one class of 30
- © Creating and modifying SharePoint sites is easy
- © Integration with Office is very easy
- © Great for collaborating with colleagues on research projects!

**The Wiki Philosophy (1)**

- All Wiki users have an inherent right to change anything on the page. This includes the ability to add, modify, or even delete another user’s work
- Along with this right comes an expectation of mutual respect and trust—i.e., that participants will not act out of malice but out of a mutual desire to create an effective product that reflect multiple perspectives.
- Use the Wiki to move toward a coherent and effective source of knowledge—not as a battleground for divergent opinions.
The Wiki Philosophy (2)

- Wikis epitomize collaboration without personal interaction. For that reason, other technologies can complement the use of a Wiki by providing a means for interpersonal interaction outside of the Wiki environment (e.g., IM, email).
- One of the founders of Wikipedia once stated, “The only way you can write something that survives [in a Wiki] is that someone who’s your diametrical opposite can agree with it.” In other words, don’t dictate—collaborate!

Examination of an Actual Wiki Site (1)

- Step 1:
  - Assign 5 debate topics to ten teams; each topic has both an affirmative and a negative side
- Step 2:
  - Teams use the Wiki to build a resource page for their side of the debate
- Step 3:
  - Teams conduct an in class debate

Examination of an Actual Wiki Site (2)

- Step 4:
  - Affirmative and Negative teams use the Wiki to develop an Executive Summary (“Lessons for Managers”)
- Step 5:
  - The textbook author and I grade and comment on the depth of the teams’ analysis
- Step 6:
  - Students are evaluated on the material

Wikis: Good and Bad

- ☄ Technology concerns
  - Must use a secured website
  - To run a Wiki internally, will need the assistance of a network admin
  - Options: MediaWiki and TWiki
- ☼ The Good
  - Simple technology to use
  - Easy to learn
  - It’s fun: Students love it
  - Can track the amount of each student’s contribution

Final Suggestions

- Start small and expand as you grow more comfortable
- Look at these technologies as complements to classroom management systems, not as replacements
- Using collaborative software enables instructors to create an environment conducive to learning.

Final Suggestions (2)

- Other interesting technologies to explore
  - Blogs
  - Chat
  - Podcasting
  - NetMeeting
STAGE 4

Return to your home group. Your group will assist Dan by formulating the final recommendations for the Executive V.P. Your recommendations should be in the form of a ten-minute PowerPoint Presentation and should answer the following focus questions:

1. Should Portal offshore its customer service function?

2. If so, how much? How can it complete the transition as painlessly as possible? What are the future implications of offshoring its call centers?

3. If not, what are Portal alternatives to offshoring? What are the advantages and disadvantages?

4. How can Portal balance the concerns of its stakeholders?
Comparison of Teacher-Centered and Learner-Centered Paradigms

From Figure 1-2 in Huba and Freed, Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning, 2000

What I know best I have taught…

…the individuals learning the most in the teacher-centered classrooms are the teachers there. They have reserved for themselves the very conditions that promote learning:

actively seeking new information,
integrating it with what is known,
organizing it in a meaningful way, and
explaining it to others.

Page 35, Huba and Freed, Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning, 2000

First, an exercise:

1. Individually, write down five words or short phrases that come to mind when you think of: Student-Centered Learning
2. In small groups, select three “most important”.
3. Finally, prepare to report out one choice.

Comparison of Paradigms

Teacher-Centered

Knowledge is transmitted from professor to student.

Learner-Centered

Students construct knowledge through gathering and synthesizing information and integrating it with the general skills of inquiry, communication, critical thinking, and problem solving.

Comparison of Paradigms

Teacher-Centered

Students passively receive information.

Learner-Centered

Students are actively involved.

Comparison of Paradigms

Teacher-Centered

Emphasis is on acquisition of knowledge outside the context in which it will be used.

Learner-Centered

Emphasis is on using and communicating knowledge effectively to address enduring and emerging issues and problems in real-life contexts.
## Comparison of Paradigms

### Teacher-Centered
- Instructor’s role is to be primary information giver and primary evaluator.

### Learner-Centered
- Instructor’s role is to coach and facilitate.
- Instructor and students evaluate learning together.

### Comparison of Paradigms

<table>
<thead>
<tr>
<th>Teacher-Centered</th>
<th>Learner-Centered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching and assessing are separate.</td>
<td>Teaching and assessing are intertwined.</td>
</tr>
<tr>
<td>Assessment is used to monitor learning.</td>
<td>Assessment is used to promote and diagnose learning.</td>
</tr>
<tr>
<td>Desired learning is assessed indirectly through the use of objectively scored tests.</td>
<td>Desired learning is assessed directly through papers, projects, performances, portfolios, and the like.</td>
</tr>
</tbody>
</table>

### Comparison of Paradigms

<table>
<thead>
<tr>
<th>Teacher-Centered</th>
<th>Learner-Centered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis is on right answers.</td>
<td>Emphasis is on generating better questions and learning from errors.</td>
</tr>
</tbody>
</table>
## Comparison of Paradigms

### Teacher-Centered
- Culture is competitive and individualistic.

### Learner-Centered
- Culture is cooperative, collaborative, and supportive.

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## Outcomes?

### Moving away from:
- Are students getting the right answer?

### Moving to:
- Can students demonstrate the qualities that we value in educated persons, the qualities we expect of college graduates?

### Moving to:
- Can students gather and evaluate new information, think critically, reason effectively, and solve problems?

### Moving to:
- Can [students] communicate clearly, drawing upon evidence to provide a basis for argumentation?
Outcomes?

Moving to:

Do [students’] decisions and judgments reflect understanding of universal truths[/concepts] in the humanities and arts [etc.]?

Outcomes?

Moving to:

Can [students] work respectfully and productively with others?

Outcomes?

Moving to:

Do [students] have self-regulating qualities like persistence and time management that will help them reach long-term goals?
Defining Assessment

“An assessment is an activity, assigned by the professor, that yields comprehensive information for analyzing, discussing, and judging a learner’s performance of valued abilities and skills.”

- Huba and Freed, Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning, 2000

Assessment is more than assigning grades: it implies ongoing interaction and communication between instructor and student.

Assessment Decisions

Faculty Perspective:
“Learning drives everything.”

- Barbara Walvoord

Student Perspective:
“Grading drives everything”

Key Questions

• What do I want my students to learn?
⇒Learning objectives
  - Content knowledge
  - Process skills

• How will I know if they’ve learned it?
⇒Assessment strategies
  - Summative
  - Formative

• How much do I value that learning?
⇒Look at what counts towards the grade

Types of Assessment

• Summative assessment
  - Traditional grading for accountability
  - Usually formal, comprehensive
  - Judgmental

• Formative assessment
  - Feedback for improvement/development
  - Usually informal, narrow/specialized
  - Suggestive

Assessment and Learning Objectives

Bringing content and process together

Content Knowledge

Process Skills

Assessment
An Example:
Probing Critical Thinking Skills in a Chem Exam

Goal: to design an exam question that:
• goes beyond simple knowledge or comprehension
• uses novel situation or “real world” context
• involves multiple concepts
• requires recognition of concepts involved
  (analysis), their roles here (application), and how
several ideas come together (synthesis)

Chemical Solutions: Typical Questions

Calculate the vapor pressure of a solution of 5.8 g of NaCl in 100 g of water.
Bloom Level: Knowledge

Explain why a solution of NaCl will have a lower vapor pressure than pure water.
Bloom Level: Comprehension

A “Critical Thinking” Exam Question

The relative humidity inside a museum display case can be maintained at 75.3% by placing within the case a saturated solution of NaCl (containing excess solid NaCl). Explain, in molecular level terms, why the humidity remains constant - even when water-saturated air (100% humidity) diffuses into the case.

An Alternative Approach….

Design a solution-based system that could be used to maintain a constant humidity within a museum display case.

Explain in molecular-level terms why this would work.

Assess at Several Bloom Levels

<table>
<thead>
<tr>
<th>Example: Chem exam</th>
<th># of points</th>
<th>sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Comprehension</td>
<td>36</td>
<td>45  (D+)</td>
</tr>
<tr>
<td>Application</td>
<td>22</td>
<td>67  (C+)</td>
</tr>
<tr>
<td>Analysis</td>
<td>20</td>
<td>87  (A-)</td>
</tr>
<tr>
<td>Synthesis</td>
<td>9</td>
<td>96  (A)</td>
</tr>
<tr>
<td>Evaluation</td>
<td>4</td>
<td>100</td>
</tr>
</tbody>
</table>

Evaluating Learning through Rubrics

Rubric: a set of specific criteria against which a product is to be judged
• Criteria reflect learning objectives for that activity
• Several achievement levels are identified for each criterion
• Benchmark features indicating quality of work at each level are clearly described for each criterion

Rubrics can be used for both formative and summative assessment.
### Rubric Design

#### Achievement Levels

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accepted</td>
<td>Expert</td>
<td>6-5</td>
</tr>
<tr>
<td></td>
<td>Minor revision</td>
<td>Advanced</td>
<td>4-3</td>
</tr>
<tr>
<td></td>
<td>Major revision</td>
<td>Intermediate</td>
<td>2-1</td>
</tr>
<tr>
<td></td>
<td>Rejected</td>
<td>Novice</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Rubric Construction

#### Achievement Levels

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Excellent</th>
<th>Good</th>
<th>Needs Work</th>
<th>Not acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>State an objective</td>
<td>Describe characteristic features of each level of achievement</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Rubric for Planning of a Middle School Science Unit

<table>
<thead>
<tr>
<th>Excellent</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>State &amp; national standards</td>
<td>Appropriate; listed for each lesson</td>
<td>Appropriate; listed for most lessons</td>
<td>Incomplete list/ less appropriate</td>
</tr>
<tr>
<td>Developmental level of lesson</td>
<td>Appropriate; misconceptions addressed in all lessons</td>
<td>Appropriate; misconceptions addressed in most lessons</td>
<td>Most lessons are appropriate; misconceptions addressed in few</td>
</tr>
<tr>
<td>Includes nature of science, inquiry in assessment</td>
<td>Appropriate; misconceptions addressed in all lessons</td>
<td>Appropriate; misconceptions addressed in most lessons</td>
<td>Few lessons</td>
</tr>
<tr>
<td>Assessment</td>
<td>Variety of activities, well-integrated</td>
<td>Used in most areas but missed in some</td>
<td>Used but with little planning or integration</td>
</tr>
</tbody>
</table>

### Advantages of Rubric Use

- Clarifies expectations
- Efficient, specific feedback concerning areas of strength, weakness
- Convenient evaluation of both content and process learning objectives
- Encourages self-assessment: use as guideline
- Minimizes subjectivity in scoring
- Focal point for ongoing feedback for improvement

### Other Ideas for Rubric Use

- Have students participate in setting criteria, performance descriptions
  - Use old student work as “data”
- Have students use rubric to rate own work; submit rating with assignment
- Others
TIPS ON GRADING: USING RUBRICS

A grading rubric is a scoring guide or checksheet that identifies the standards and criteria for a given assignment. Rubrics work particularly well for assessing communication activities such as presentations, written assignments, or teamwork. They help you and your students come to a shared understanding of the requirements of an assignment.

Rubrics help you simplify grading and ensure consistency. Using one, you can comment at length on just one or two points and then, depending on your priorities, highlight the strengths and weaknesses of the rest of the paper. You can use rubrics to allow you the time to respond to early drafts, students can apply them during peer review, or you can use them in conjunction with brief overall comments to save time grading final drafts. Generally, it is best for students to understand in advance the criteria by which their performance is to be judged.

THE BEST RUBRICS ARE SPECIFIC TO THE ASSIGNMENT

It is important to note that a very general rubric provides little feedback or guidance to students. In other words, the more explicit the rubric to the specific assignment, the more direction students get, and the easier it is for them to write to a target, revise a draft paper, or improve on the next assignment.

On the next several pages, you will find sample rubrics for different courses and purposes. Even though each is designed for a specific task, most could easily be modified for your specific course and needs. Thus, the rubric for a research proposal in chemistry might easily be adapted for a biology or social sciences proposal.

Page 2   Marketing Proposal
Page 3   Presentation Report
Page 4   Research Proposal in Chemistry
Page 5   Teamwork
Page 6-7  Critical Reading and Analysis
Page 8   Research Paper in History
Page 9   Argument Paper in 1st Year Composition

USEFUL SOURCES:


The following websites offer excellent discussions and samples of scoring rubrics:

http://writing.colostate.edu/references/teaching/grading/pop2d.cfm
http://www.missouri.edu/~pattonmd/rubrics.html
http://www.missouri.edu/~pattonmd/commenting.html
## MARKETING PROPOSAL

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Max. Points (100 Total)</th>
<th>Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover/Title page</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Table of contents</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Introduction/background</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Competitive analysis</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Proposed plan</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Cost/benefit analysis</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Conclusion</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Tables and charts</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Format</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Grammar and style</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Works cited/APA Style</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
## PRESENTATION REPORT EVALUATION

**Presentation Topic** __________________________________________________

**Evaluator** ____________________________________________________________

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Great</th>
<th>OK</th>
<th>Needs Work</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong purpose with attention to action</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Well planned beginning and ending</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Engaging, interesting verbal style</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Strong content with good detail</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Sufficient context given for audience to understand the topic</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Strong PowerPoint design &amp; delivery</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Good use of data, charts, drawings, tables, lists</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Documentation</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
# RUBRIC FOR A RESEARCH PROPOSAL IN CHEMISTRY

<table>
<thead>
<tr>
<th>Section</th>
<th>(quite weak)</th>
<th>2</th>
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<tr>
<td><strong>Summary</strong></td>
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<tr>
<td>Synopsis of the lit review</td>
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<tr>
<td>Brief outline of proposed work</td>
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<tr>
<td>Anticipated results and their significance</td>
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<tr>
<td><strong>Literature Review</strong></td>
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<tr>
<td>Persuasive case for research</td>
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<tr>
<td>Evidence and references for research</td>
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<tr>
<td>Proof that previous research has been understood</td>
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<tr>
<td><strong>Work Proposed</strong></td>
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<tr>
<td>Why research idea is a good one</td>
<td>1</td>
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<tr>
<td>What is going to be done</td>
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<tr>
<td>Details of proposed experiments</td>
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<tr>
<td>Proof that the plan will work</td>
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<tr>
<td><strong>Anticipated results</strong></td>
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<tr>
<td>Results will make a contribution to the problem</td>
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<tr>
<td><strong>References</strong></td>
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**Total points**
RUBRIC FOR EVALUATING TEAMWORK

TEAM MEMBER EVALUATION

Evaluate your fellow group members by assigning numbers based on individual performance in the group setting. The purpose of this evaluation is to help individuals understand how their work is perceived by others. Evaluations will be anonymous and will help the instructor assign points for class participation.

Name of team member being evaluated:__________________________________________

Score Key
-1: Hindered group effort  0: Made no contribution  1: Contributed little
2: Contributed adequately  3: Contributed actively  4: Made major contributions

1. Student’s preparation for and attendance at group meetings.
   -1 0 1 2 3 4

2. Student’s participation during group meetings.
   -1 0 1 2 3 4

3. Student’s performance on assigned tasks—quality of work.
   -1 0 1 2 3 4

4. Student’s ability to work with others.
   -1 0 1 2 3 4

5. Student’s ability to accept constructive criticism, compromise, and negotiate.
   -1 0 1 2 3 4

6. Student’s ability to meet deadlines.
   -1 0 1 2 3 4

Comments on strengths and weaknesses as team member:

<table>
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<tr>
<th></th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
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Overall Evaluation_______
(Add all 6 evaluations; divide by 6)
## RUBRIC FOR EVALUATING WRITING THAT REQUIRES CRITICAL READING AND ANALYSIS

(Rubric developed by The FIPSE Inter-Institutional General Assessment Project 2004)

<table>
<thead>
<tr>
<th>Category</th>
<th>Low Scores 1 or 2</th>
<th>Average Score 3</th>
<th>High Scores 4 or 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Evidence of controlling purpose (central idea or argument)</strong></td>
<td>Fails to establish purpose for writing. No clear point or purpose; no central argument to paper. Paper drifts substantially from initial purpose or controlling idea.</td>
<td>Purpose or controlling idea is established initially, but inconsistently attended to. Paper shows some unity of purpose, though some material may not be well aligned.</td>
<td>Establishes strong sense of purpose, either explicitly or implicitly. Controlling purpose governs development and organization of the text. Attends to purpose as paper unfolds.</td>
</tr>
<tr>
<td><strong>2. Engagement with the text</strong></td>
<td>Shows evidence that materials were read and that those texts have shaped the students’ writing. Shows basic understanding and ability to engage the substance of the text(s). Goes beyond repetition or summary of source text(s).</td>
<td>Shows clearly that the student read and understood the source text(s) that inform the paper. Summarizes key points or issues in the source text and then critically analyzes or synthesizes those ideas with the students’s own ideas. Extends the ideas of the source text in interesting ways.</td>
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<tr>
<td><strong>3. Use of source material</strong></td>
<td>Source materials are cited, though not always consistently. It is generally clear when information comes from source text(s). Most in-text citations have appropriately formatted end-of-text references.</td>
<td>Source materials are introduced, contextualized, and made relevant to the purpose of the paper. It is always clear when information, opinions, or facts come from a source as opposed to coming from the student. Source materials are conventionally documented according to academic style (APA, MLA, CSE).</td>
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</table>
# RUBRIC FOR EVALUATING WRITING THAT REQUIRES CRITICAL READING AND ANALYSIS (CONTINUED)

<table>
<thead>
<tr>
<th>Category</th>
<th>Low Scores 1 or 2</th>
<th>Average Score 3</th>
<th>High Scores 4 or 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4. Organization</strong></td>
<td>Moves in unpredictable sequence. Lacks progression from start through middle to end. Paragraphs unpredictably structured.</td>
<td>Some evidence of organization, with appropriate moves in the introduction and conclusion and some partitioning in the body. Most paragraphs have topic sentences with supporting details.</td>
<td>Establishes clear pattern of development, so the paper feels organized and orderly from beginning to end. Uses effective generalization/support patterning. Strong paragraphing.</td>
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<tr>
<td><strong>5. Support</strong></td>
<td>Moves from idea to idea without substantial development; lacks depth. Lacks support for arguments or claims.</td>
<td>Achieves some depth and specificity of discussion. Provides specific detail in some places.</td>
<td>Develops specific ideas in depth with strong and appropriate supporting examples, data, experiences.</td>
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<tr>
<td><strong>6. Style</strong></td>
<td>Lacks control over sentence structure; difficult to follow. Little control over sentence patterns of subordination and coordination. Requires the reader to backtrack to make sense. Uses wrong words and awkward phrasing.</td>
<td>Style is competent, though not engaging or inventive. Shows reasonable command over phrasing and word choice. Some useful connections from sentence to sentence.</td>
<td>Student clearly controls the pace, rhythm, and variety of sentences. Sentence style is smooth and efficient, with good use of subordination and coordination. Words are well chosen and phrasing is apt and precise. Sentences move smoothly from one to the next, with clear moves that open, develop, and close topics.</td>
</tr>
<tr>
<td><strong>7. Command of sentence-level conventions</strong></td>
<td>Many errors of punctuation, spelling, capitalization (mechanics). Many grammatical errors (agreement, tense, case, number, pronoun use).</td>
<td>Some typical errors are in evidence, but overall, the writing is correct.</td>
<td>Few, if any, errors of punctuation, spelling, capitalization (mechanics). Few if any grammatical errors (agreement, tense, case, number, pronoun use).</td>
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## RUBRIC FOR A RESEARCH PAPER IN HISTORY

**Paper on Politics Between the World Wars**

<table>
<thead>
<tr>
<th>Poor</th>
<th>Adequate</th>
<th>Good</th>
<th>Great</th>
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</table>

- **Specific title**
- **Introduction** showing why there is a controversy about the role of inflation in Germany on international trade
- **Focused argumentative thesis statement**
- **Logical organization** built with step-by-step evidence
- Details, dates, etc., that **support** the argument in your thesis, particularly citing from three of the five assigned readings thus far in the semester.
- **Extensive documented primary sources**
- **Quotations** smoothly woven into the text
- **Acknowledgement of opposing viewpoints**
- **Original thinking**, not a rehash of previous writers
- **Conclusion** that extends your findings into the broader context of the themes we’ve discussed this semester. Avoids merely summing up what you have already said.

- **Style**
  - Varied, Effective **Sentences**
  - **Audience** awareness
  - Lively **language**
  - Non-judgmental **tone**
  - Effective **Mechanics**
- **Footnotes/endnotes**, Chicago style
# RUBRIC FOR AN ARGUMENT PAPER IN 1ST YEAR COMPOSITION

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Outstanding</th>
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<th>Poor</th>
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<tbody>
<tr>
<td>Strong introduction with appropriate context</td>
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<tr>
<td>Clear thesis statement with arguable assertion</td>
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<tr>
<td>Support for arguments from class lecture/discussion</td>
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<tr>
<td>Support for arguments from primary sources</td>
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<tr>
<td>Effective organization</td>
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<tr>
<td>Refutation of opposing viewpoints</td>
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<tr>
<td>Transitions</td>
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<tr>
<td>Effective conclusion</td>
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<tr>
<td>Grammar</td>
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<tr>
<td>Punctuation</td>
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<tr>
<td>Spelling</td>
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<tr>
<td>Works cited page/ parenthetical citations in MLA style</td>
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<tr>
<td>Overall interest factor</td>
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