



ST. PETERSBURG COLLEGE

Web and Instructional Technology Services

# Improving Student Critical Thinking Skills Using **Google**™ Tools

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Critical Thinking Idea #1: Design instruction so that students engage in routine practice in internalizing and applying the concepts they are learning (and evaluating their understanding of each.)

**Overview:** For students to learn any new concept well they must initially internalize the concept, then apply the concept to a problem or issue so that they come to see the value of understanding the concept. At the same time, they need to evaluate how well they are internalizing the applying the concepts they are learning.



**Google Tool:** Google *knol* - "According to Google, a *knol* is a single unit of knowledge, and the Google *knol* is a platform for sharing that knowledge. *Knol* makes it free and easy to create, collaborate on, and publish credible web content. Put your name behind your content; write a *knol*."

**Idea for Application:** "Building history, not just memorizing history"- create a collection of collaborative student work analyzing source documents and other texts throughout the course of the semester.

### Creating a *knoll*

1. Go to <http://knol.google.com> and sign in.
2. Click "write a knol."
3. Choose to:
  - Create a new knol.
  - Copy an existing knol.
  - Create a new collection of knols.
  - Import a file as a new knol

**Resources:** <http://knol.google.com/k/knol/knol/Help#>



### Critical Thinking Idea #3: Teach students how to assess their writing.

**Overview:** Good thinking is thinking that (effectively) assesses itself. Because of the importance of self-assessment to critical thinking, it is important to bring it into the structural design of the course and not just leave it to random or chance use.



**Google Tool:** Google Docs - One of the best features of Google Docs is the **collaboration feature**. Students can use this feature to edit each other's writing and engage in the peer review process.

**Idea for Application:** Working in groups of three or four, students write out their recommendations for improvements on three or four papers. The written recommendations go back to the original writers who do a revised draft. Using this method every student receives written feedback on their papers from a "team" of critics.

#### Using Google Docs for Assessing Writing

1. Log in to your **Google Docs account**
2. Click on **Create New** on the left side of the screen
3. Select the **Share** tab in the upper right hand corner. Students can invite others with a Gmail account to be collaborators, by simply entering their email addresses and clicking "Invite Collaborators."
4. You can also have them invite you so that you can monitor their progress and provide feedback along the way.
5. After entering collaborators, each collaborator will have a different color to distinguish what they contributed to the document.
6. Comments can be added by going to **Insert → Comment**.
7. As students revise a document, the revision screen will show who worked on the document and when they worked on it.
8. A complete revision history is available by first clicking on **File → See revision history**.

**Resources:** <http://www.google.com/educators/weeklyreader.html>



Critical Thinking Idea #7: Make the course “work-intensive” for the students, but not for you.

**Overview:** There are two significant mistakes to avoid. The first is designing classes so students can pass them without thinking deeply about the content of the course. The second is designing classes so that you must work harder than the students.



**Google Tool:** Google Docs/Forms

**Idea for Application:** In this activity, students will generate a class study guide by providing information via a pre-created Google form. Build a Google form that asks students to provide suggestions for items to be included on the class study guide. One possibility would be to ask students to provide a potential question (and answer) for the unit exam. To make the study guide even more interesting and valuable, ask the students to provide questions that covered material that they themselves found challenging in the unit of study.

### Building and Sharing the Google Form

1. Log in to your **Google Docs account**
2. From the **Create new** dropdown select Form.

3. Fill in the **form title and directions**. Type the question text in the **Question Title** field on the form. Be sure to select **Paragraph text** from the **Question Type** dropdown.
4. Delete **Sample Question 2** using the **Trash icon** on the right.
5. **Save** the form.
6. Use the link at the **bottom of the page** for sharing the form with students.

**Use the student form submissions to create the class study guide.**



### Critical Thinking Idea #9: Require an intellectual journal.

**Overview:** One powerful strategy for teaching students to assess their own thinking and to apply the concepts they are learning in class to what they think is important in their lives is to require them to write journal entries during the course of the semester. Such a journal provides a bridge between the class and the students' daily experience and decision making.



**Google Tool:** Google Calendar

**Idea for Application:** Have students login to their Google accounts and write daily or weekly journal entries. The goal of the journal would be to have the students discuss what they are learning, difficulties or successes they are experiencing and how their learning is affecting their everyday lives.

### Using Google Calendar for journaling.

1. Log in to your **Google Docs account and select Calendar.**
2. Click on the **Create Event** link on the left.
3. Fill in the **What** as the title of the journal entry.
4. The student will write the journal entry in the **Description box.**
5. **Save** the entry.
6. View steps for sharing a calendar here:  
<http://www.google.com/support/calendar/bin/answer.py?answer=37082>



Critical Thinking Idea #21: Encourage students to think of content as a form of thinking.

**Overview:** When students think poorly while learning, they learn poorly. When they think well while learning, they learn well. Give examples of the way in which data is collected in the field and of the way those data are processed (the inferences or conclusions that professionals come to),



**Google Tool:** Google Scholar - Google Scholar helps you search and find academic papers, abstracts and other scholarly sources – all with the speed and accuracy of Google search.

**Idea for Application:** Have students find recent, relevant, scholarly articles by professionals in the field. Use these articles to examine how these professionals think.

#### Using Google Scholar for Research

1. Go to <http://scholar.google.com>
2. Type in to the search field to search for articles on your topic.(You can click on “Advanced Scholar Search” for more specific criteria.)
3. Click on “Scholar Preferences” to add links to items in specific libraries.
4. Click on “Recent articles” on the rights side of the results page to keep up with recent research.
5. Click on “Cited by” or “Related articles” to find similar articles

**Resources:** <http://scholar.google.com/intl/en/scholar/help.html>