SWoRD Peer Review system

Using technology to improve students' writing

CS2001 Fall 2014

About me

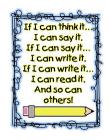
- Huy Viet Nguyen
- 4th year
- Prof. Litman's lab
- NLP > NLP Applications in Edu > Peer reviews & Student writings >
 Review helpfulness & Natural language argument

Contact

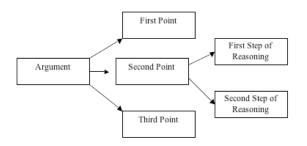
- 5420 SENSQ
- hvn3@pitt.edu
- http://people.cs.pitt.edu/~huynv

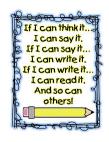
Outline

- An overview
 - Why peer review
 - Be a good reviewer
- SWoRD Peer Review system
 - Behind your screen (a.k.a teacher's view)
 - How to's (a.k.a student's view)
- A little inside the system
 - SWoRD mechanics
 - SWoRD intelligence
- Live demo

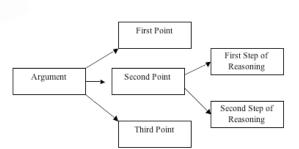




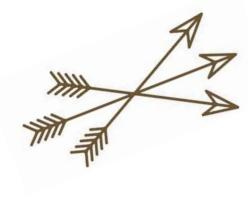




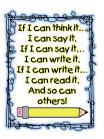




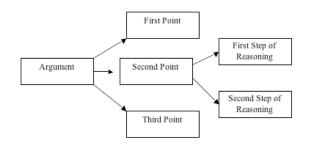


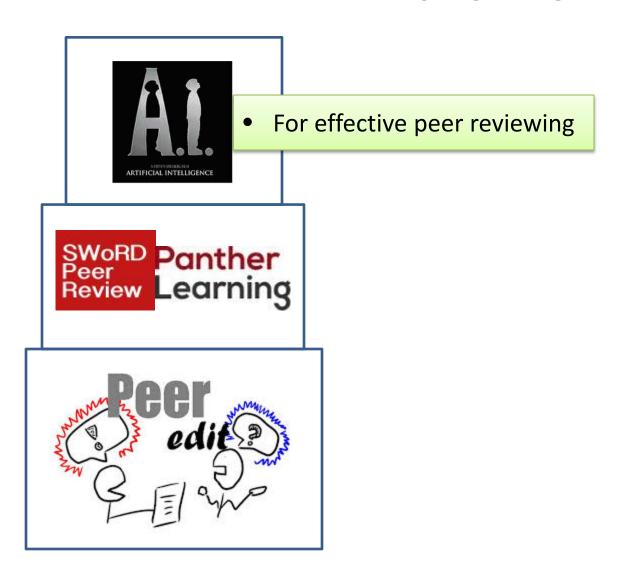


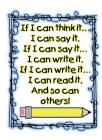




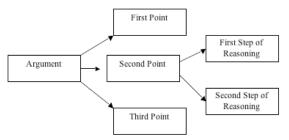


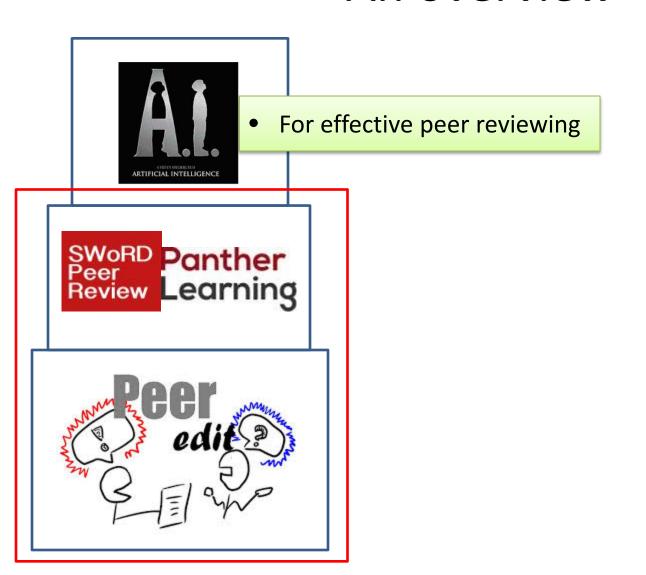






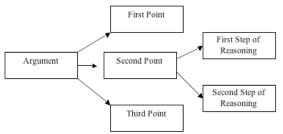












Why peer review^[2,3,4]

- Support learning process
 - Peer authors: have feedback on strengths, weaknesses and/or tips for improvement
 - Peer reviewers: see other examples or approaches, form critical thinking
- Reduce instructor workload associated with writing activities
 - Instructors spend more time on other aspects of teaching
 - Students have more writing practice
- Concerns
 - Not always as effective as teacher's feedback

Be a good reviewer^[1]

Be nice

- Mention the strengths of the paper
- Try to help your peers improve their work, not evaluate them as a person

Be constructive

- Give particular ideas for how to improve the work product
- Don't just complain about a problem; offer possible solutions for how to fix it

Be specific

- Follow the rubrics given to you by your instructor for each dimension
- Be precise about where particular problems occur
- Give examples.
- Including the location of one instance of common basic writing problems (spelling/grammar, poor word choice, awkward sentence structures)

Be a good reviewer (2)

- Be open-minded about style
 - Unless instructed otherwise, there is no one way for each paper to be written
 - Ask yourself: did you understand the paper, did you believe the argument, and did you learn something?
 - If you say yes to all three, then the paper should be evaluated as good
- Consider what aspects of your own work you want to improve
 - What aspect of your own writing can improve as a result of your reviews?
 - What can you take away from each review that allows you to become a better writer?
- Remember, you are being graded on your reviewing
 - Your quantitative ratings are graded according to accuracy
 - Your commenting feedback is back-evaluated (graded) by authors on helpfulness and specificity

Problems in administrating peer reviews^[2]

- Student reviewers are novices in their disciplines
 - Inaccurate feedback relative to subject-matter expert or instructor
- Student are inexperienced in constructing reviews
 - They were not trained
- High workload required to administrate peer reviews
 - Select reviewers for writers
 - Exchange writing and reviewing
- SWoRD is developed to address the above issues

What is SWoRD

- SWoRD: Scaffolded Writing and Rewriting in the Disciplines
- A web-based reciprocal peer review system to support writing practice
 - Large content class (hundreds of students)
 - Writing is critical
 - Peer review is an essential process
 - > Students gain knowledge as well as writing and reviewing skills
- Support the whole cycle
 - Writing > reviews > back-reviews > re-writings
 - Reviews are graded regarding accuracy, helpfulness

Numbers that tell

- 7: years for which SWoRD has been being developed
- 10: countries (USA, CAN, GBR, NLD, EST, HUN, SGP, KOR, CHN)
- 17: disciplines (Psychology, Astronomy & Physics, Computer Science, Biology, Economics, Engineering, Speech Pathology, English & Rhetoric, Philosophy, Women's Health, Math, Pharmacy, Social Welfare, History, Cognitive Science, Law, Education)
- ~160: active classes last year
- ~6700: active users last year
- ~1500: total seats since 2009

Three phrases to SWoRD

- Upload your product
- 2. Make reviews on the work of your peers
- Read the reviews on your work product and back-evaluate each review for helpfulness and specificity

To remember:

- Follow the instructions and prompts on the main SWoRD dashboard
- Complete before the deadline
- Part of your grade is determined by performing all the steps in the process

Teacher user

Tasks

- Create course
- Create assignment
- Manage reviewer-author assignment
- Manage grade

Teacher user views: course info

SWoRD Demo Course Info	Students Assignments Grades	Stats Export Data Contact
About the course		
Class Code: * Tell your students this code if you want them to enroll themselves in this class.	demo2010	
Class Name:	SWoRD Demo	
Meeting days:	MWF	
Year:	2014 ▼	
Semester:	Fall ▼	
Time Zone: *All deadlines are based on Eastern Standard Time	(GMT -5:00 hours) Eastern Time (US & Canada)	•
Class Discipline:	11 World Cultures	▼
School Type:	Doctorate-granting University ▼	
Institution:	University of Pittsburgh	▼ or type it:

Course info (2)

Archive

Update

Basic Peer Review Settings

Reviewing Style:	Soft Submission Deadlines ▼
Grace Period for Late Papers: For Hard Submission Deadlines	Not allowed ▼
Penalty for late papers (per day):	5.0% ▼
Grace Period for Late Reviews:	1 day ▼
Penalty for late reviews (per day):	5.0% ▼
Bonus review points:	0% ▼

Advanced Peer Review Settings

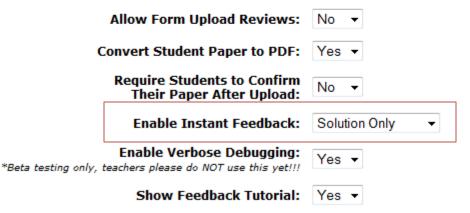
Allow Form Upload Reviews:	No ▼
Convert Student Paper to PDF:	Yes ▼
Require Students to Confirm Their Paper After Upload:	No ▼
Enable Instant Feedback:	Solution Only ▼
Enable Verbose Debugging: *Beta testing only, teachers please do NOT use this yet!!!	Yes ▼
Show Feedback Tutorial:	Yes ▼
	1

Course info (2)

Basic Peer Review Settings

Reviewing Style:	Soft Submission Deadlines	•
Grace Period for Late Papers: For Hard Submission Deadlines	Not allowed ▼	
Penalty for late papers (per day):	5.0% ▼	
Grace Period for Late Reviews:	1 day ▼	
Penalty for late reviews (per day):	5.0% ▼	
Bonus review points:	0% ▼	

Advanced Peer Review Settings

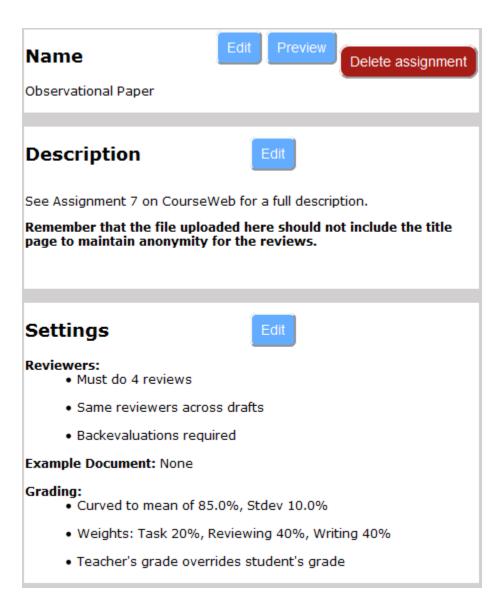


SWoRD will/not identify whether review comments have localization and/or solution idea

No 🔻	
No	
Yes	
Localization Only	
Solution Only	
	No

Update

Teacher user views: assignment design



Assignment design (2)

Drafts

Draft 1: Edit Deadlines and Settings

- Submit by 11/04/2013 + 0 day grace
- Review by 11/09/2013+1 day grace
- Backevaluate by 11/18/2013
- · Revision planning tool is disabled.
- · Thesis detection tool is disabled.

Draft 2: Edit Deadlines and Settings

- Submit by 11/18/2013 + 0 day grace
- · Reviewed only by teacher.
- · Revision planning tool is disabled.
- Thesis detection tool is disabled.

Advanced Functions:

Manage Reviewers

Release Deadline

Re-Calculate Grades

Advanced Functions:

Manage Reviewers

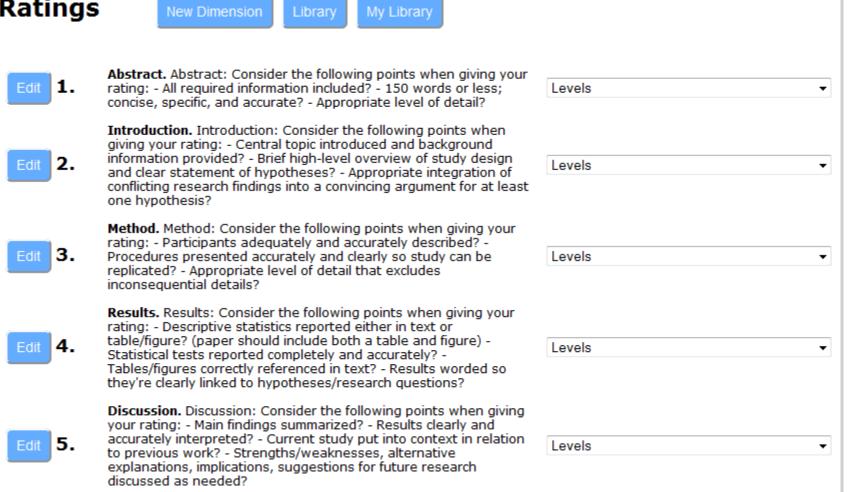
Release Deadline

Re-Calculate Grades

Add a Draft

Assignment design (3)

Ratings



Assignment design (4)

Comment Prompts

New dimension

Library

My library



Abstract. # of comments

Abstract: Consider the following points when giving your comments: All required information:

Abstract: Consider the following points when giving your comments: - All required information included? - 150 words or less; concise, specific, and accurate? - Appropriate level of detail? Comment on ways that this section failed or succeeded at doing these things. Describe anything that was missing or weak and make specific suggestions for additions, deletions, or changes to this section of the paper.



Introduction.

1-3

1-3

Introduction: Consider the following points when giving your comments: - Central topic introduced and background information provided? - Brief high-level overview of study design and clear statement of hypotheses? - Appropriate integration of conflicting research findings into a convincing argument for at least one hypothesis? Comment on ways that this section failed or succeeded at doing these things. Describe anything that was missing or weak and make specific suggestions for additions, deletions, or changes to this section of the paper.



Method.

1-3

Method: Consider the following points when giving your comments: - Participants adequately and accurately described? - Procedures presented accurately and clearly so study can be replicated? - Appropriate level of detail that excludes inconsequential details? Comment on ways that this section failed or succeeded at doing these things. Describe anything that was missing or weak and make specific suggestions for additions, deletions, or changes to this section of the paper.



4

Results.

1-3

Results: Consider the following points when giving your comments: - Descriptive statistics reported either in text or table/figure? (paper should include both a table and figure) - Statistical tests reported completely and accurately? - Tables/figures correctly referenced in text? - Results worded so they're clearly linked to hypotheses/research questions? Comment on ways that this section failed or succeeded at doing these things. Describe anything that was missing or weak and make specific suggestions for additions, deletions, or changes to this section of the paper.

Student user

Three tasks

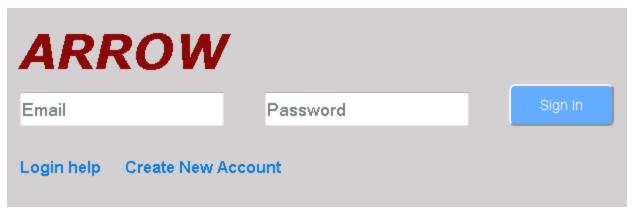
- Submit writing
- Submit review on others' writings
- Submit back-evaluation on others' reviews

Views

- Assignment timeline
- Submitted document, made reviews, received reviews
- To do items regarding three tasks
- Grades

Student user view: account

https://arrow.lrdc.pitt.edu/arrow/



Student user view: account

SWoRDTM Create New Account

First Name:	Huy
Last Name:	Nguyen
Pseudonym: (The name reviewers will see when they read your paper. Don't use your email name or anything that contains your real name.	
Pseudonym must be alphanumeric with no spaces. Also don't use names you will be embarrassed to have your instructor see because they will see this name as well.)	nobody
? Email:	hvn3@pitt.edu
(Your email is also your username)	
Password:	•••••
Confirm Password:	
Role:	Student ▼
? Student Number:	
(Optional)	
? Sword Research:	Yes ▼
**More Info	
? Gender:	Select One ▼
? Ethnicity:	Select One ▼
7 Birth Year:	Select One ▼

Account

AGREEMENT TO ACT AS A PARTICIPANT IN A RESEARCH STUDY

TITLE: SWoRD Project

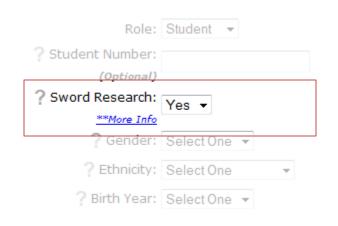
PRINCIPAL INVESTIGATORS:

Christian Schunn University of Pittsburgh, LRDC 3939 O'Hara Street, 7th Floor Pittsburgh, PA 15260 (412) 624-8807 Email: schunn@pitt.edu

DESCRIPTION:

The purpose of this research study is to determine how student writing skills are improved through a reciprocal peer reviewing process. For that reason, we will be collecting student writing, reviewing and related activities in this web-based system located at the Univ. of Pittsburgh. Also we may students to complete brief questionnaires.

I understand that, by signing in this system, I will be participating a regular class for credit and also I will be participating in a study in which I work anonymously with other people on writing and reviewing tasks using this computer system. My job will be to learn the given writing and reviewing tasks. By working together on writing and reviewing tasks, I will have opportunities to learn more about how to write more effectively, to help others write more effectively, and to learn how to work together better with others over the Internet. The research being conducted using my writing and reviewing activities will help the researchers improve the system to further help students using the system in the future. I understand that my experiences are an important resource in this effort. As such, my participation in the



Course list

ARROW

Courses

Assignments

Help -

Welcome, Huy!

Your Student Courses

CS2710f10, Fall 2010, MW

Assignments

Grades

Contact

Todo items

Reviewing the Kautz and Selman paper: First Draft, Draft #1 - grades are ready for viewing.
Reviewing the Kautz and Selman paper: Final Version, Draft #1 - grades are ready for viewing.

Thesis Detection Test Course current, Fall 2014, MoWe

Assignments

Grades

Contact

Todo items

test thesis 2, Draft #1 - grades are ready for viewing.

test thesis 3, Draft #1 - grades are ready for viewing.

test thesis 3, Draft #2 - grades are ready for viewing.

test thesis 3, Draft #3 - grades are ready for viewing.

Thesis Detection Test Course, Fall 2014, MoWe

Assignments

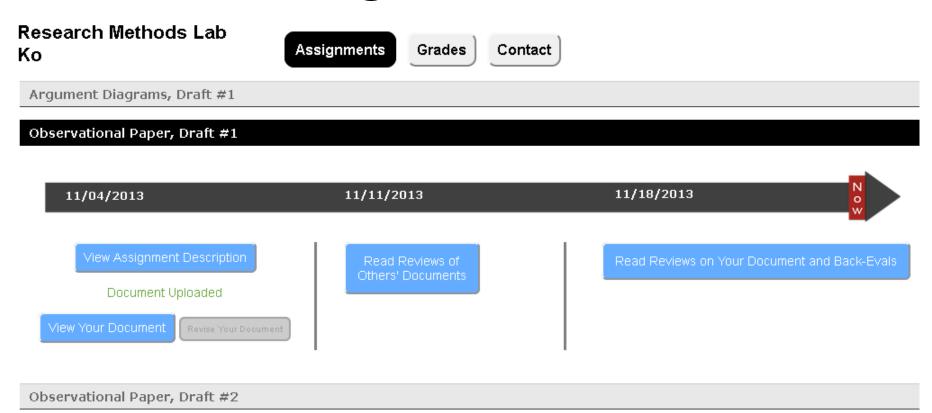
Grades

Contact

Todo items

test thesis, Draft #1 - grades are ready for viewing, test thesis, Draft #2 - grades are ready for viewing.

Assignment view



SWoRD does not have a built-in document viewer

Assignment view

Assignment Info

*All deadlines are based on Eastern Standard Time

Document #: 2

Short Description: Observational Paper

See Assignment 7 on CourseWeb for a full description.

Assignment Description:

Remember that the file uploaded here should not include the title page to maintain anonymity for the reviews.

Task Grade Weight: 20%
Reviewing Grade Weight: 40%
Document Grade Weight: 40%

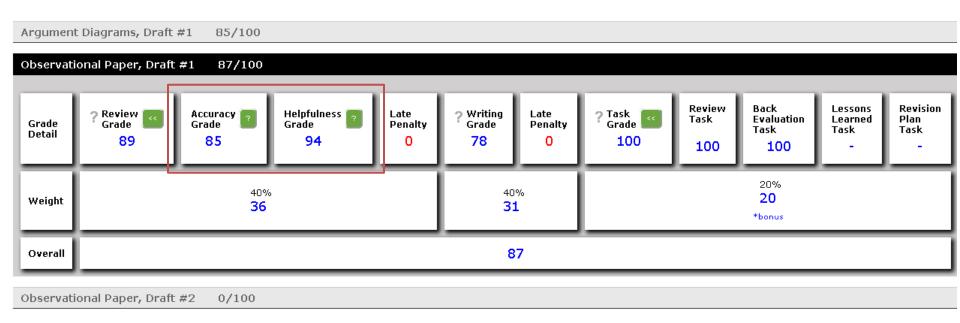
Review Form: Download

SWoRD does not have a built-in document viewer

Grade view

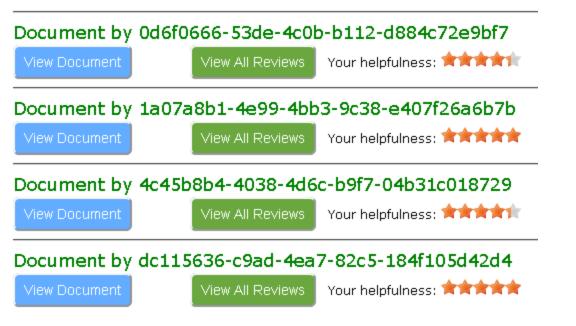
Research Methods Lab Ko





- Review accuracy: in comparison with other reviewers of the same writing
- Review helpfulness: regarding back-evaluation of writer

Grade view (2)

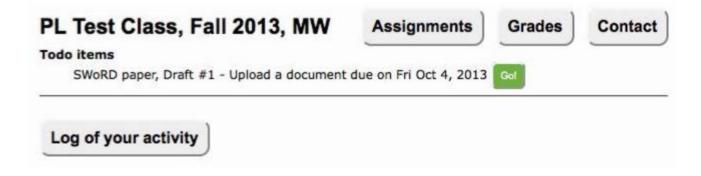


Your helpfulness score for different reviews



Your ratings of different document (on APA dimension)

Submit writing



Submit writing

Observational Paper, Draft #1 Due on 11/04/2013



Read & Review others' docs Read reviews on my doc, & make Back Eval

(Step 1 out of 2) Upload Document P2D1

Document Short Name:		
File:	Browse	No file selected.
	Submit	

*Don't forget to take your name OFF of your paper. You can include your pseudonym and the document shortname in the document, but don't include your real name in the paper.

^{**}Maximum file size that can be uploaded is 4MB.

^{***}All file formats are accepted.

^{****} Your file will be converted and saved in PDF format.

^{*****} For optimal viewing experience get latest version of Adobe Reader

Submit writing

Additional step required! You need to confirm that your uploaded document didn't get corrupted during the upload process.



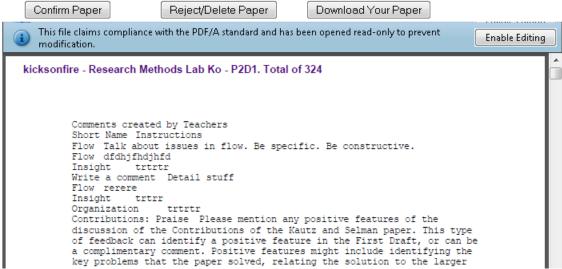


Read & Review others' docs Read reviews on my doc, & make Back Eval

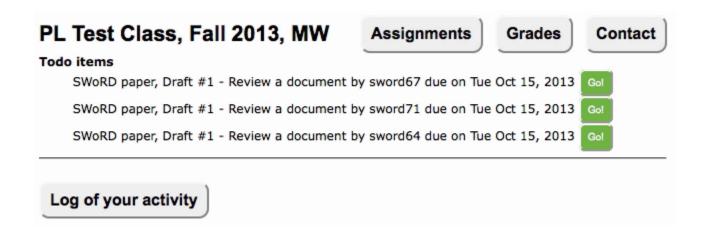
(Step 2 out of 2) Confirm uploaded paper Document 2, Draft #1 or reject it and upload again

Your paper was downloaded automatically. Please review it and make sure that everything looks right.

Then, click "Confirm" button.



Submit review



Submit review

ARROW Courses	Assignments	Help We	Icome, Huy!				
WoRD Demo	Course Info	Students	Assignments	Grades	Stats	Export Data	Contact
Assignment #6 #1	- Instant Fee	dback (H	istory) - Draf	t .	Upload	Read & Review	Read reviews on my doc,
Review Document by	Super Martian Rob	ot			Your doc	others' docs	& make Back Eval
Download Document							
ssignment Desc	ription						
rite a short paper (1-2 pa omments: 1. Did the writing flow s	smoothly so you coul	d follow the m	, , , , , , , , , , , , , , , , , , ,	you find the	e main points?	Are the transitions	from one point to
ne next harsh, or do they omment 1: (*Required)	transition naturally	?					
the flow is a little choppy.							
						4	
omment 2:							
Ratings: #1. Based on your comm Excellent - All points Very Good - All but o Good - All but two or Average - All but two	are clearly made and ne point is clearly ma three points are clea	very smoothly de and very sn Irly made and s	ordered. noothly ordered. smoothly ordered. A f	ew problem			was still possible to under erstand.
Poor - Many of the m					_	nard to follow.	

Fail - It was impossible to understand what any of the main points were and/or there appeared to be a very random ordering of thoughts.

Submit review with instant feedback

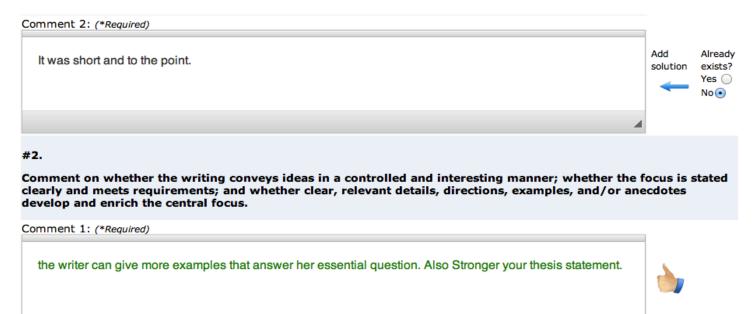
Assignment Description

Now that we are seven cantos and five levels into He;; you should be able to correlate sinners and punishments that Dante feels appropriate. Your task is to construct a well written, concise essay placing contemporaries into each level and specifically justify why each modern-day person appropriately fits...at least according to your thought process. Be certain to cite evidence from the text as needed!

Solution feedback

Your comments need to **suggest solutions**:

If you point a problem, make sure that you provide a solution to fix that problem.



Assignment Description

Now that we are seven cantos and five levels into He;; you should be able to correlate sinners and punishments that Dante feels appropriate. Your task is to construct a well written, concise essay placing contemporaries into each level and specifically justify why each modern-day person appropriately fits...at least according to your thought process. Be certain to cite evidence from the text as needed!

Localization feedback

Make sure that for every comment below, you explain **where** in the paper it applies. For example, you can indicate where your comments apply by:

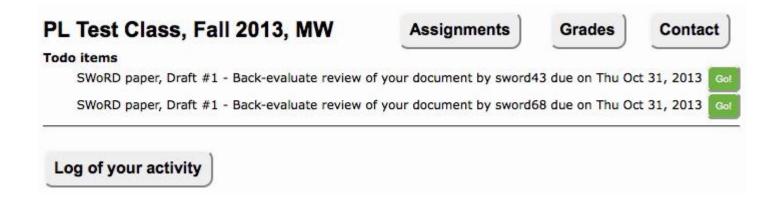
- (1) specifying page numbers and paragraph numbers in the author's text to which your comment refers,
- (2) referring explicitly to the specific topic that your comment addresses, or
- (3) quoting the excerpt from the author's text to which your comment refers.

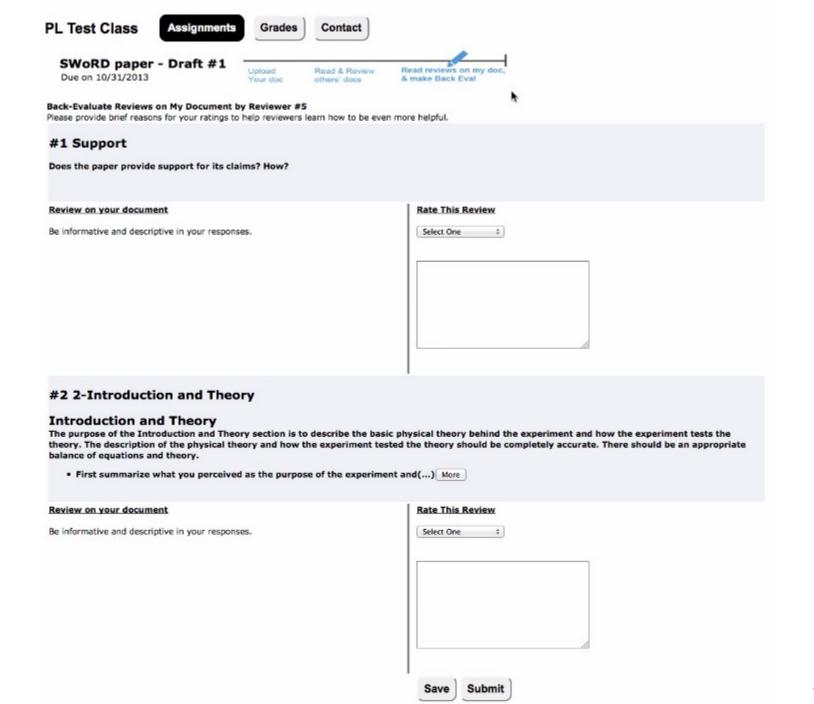
The review comments in red may be missing information about where the problem happens in the document.

A subset of your comments may do this already. Some examples of **where** you do this are highlighted in green below.

the writer can give more examples that answer her essential question. Also Stronger your thesis statement. Comment 2: (*Required) Add Already localization localized? Yes No •

Submit back-evaluation





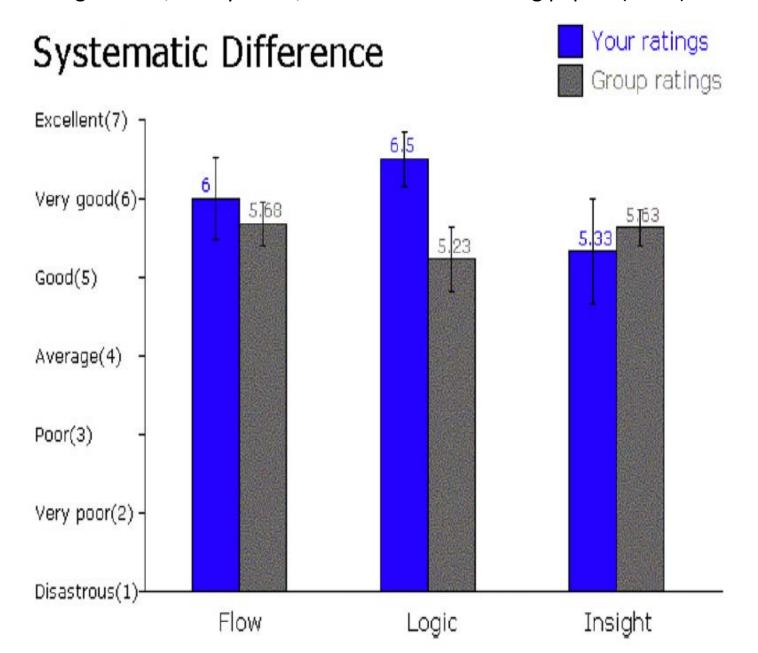
SWoRD mechanics

- Distributes writings to reviewers
- Distributes peer reviews to writers
- Determines accuracy of each reviewer's numerical ratings
 - Provides writers with reviewers' weighted ratings
 - Provides reviewers with feedback on their review accuracy
- Distributes back-evaluations to reviewers
 - As review helpfulness

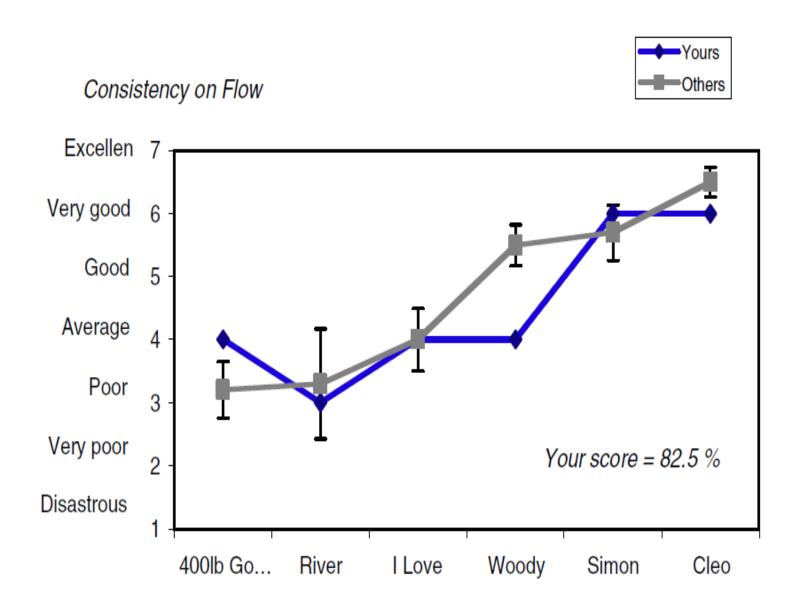
Review accuracy

- SWoRD uses 3 indices
 - Systematic difference
 - Consitency
 - Spead
 - > All depend upon a comparison of a given reviewer's ratings to the mean of ratings

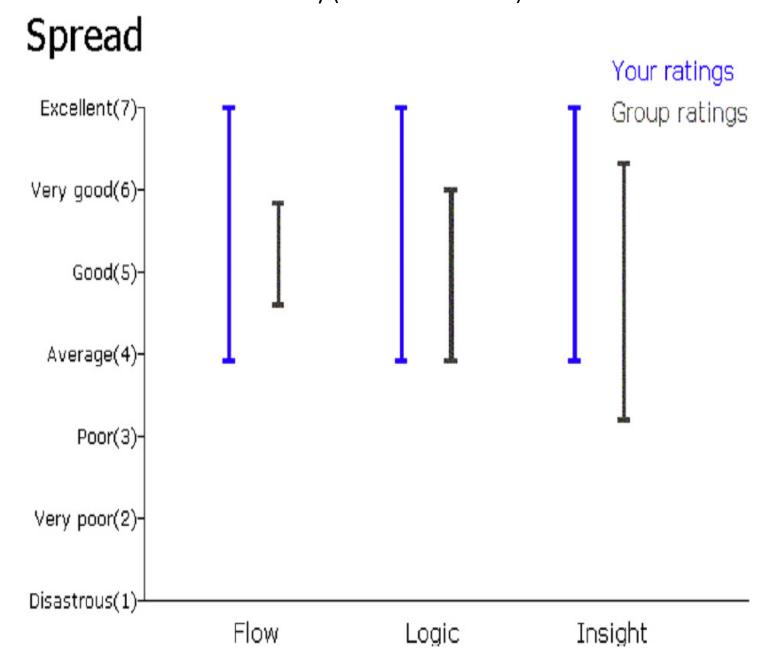
The extent to which each reviewer systematically tends to be overly generous, overly harsh, or unbiased in assessing papers (t-test)



The extent to which each reviewer systematically discerns good papers from poor papers (correlation test)



The extent to which each reviewer distributes scores too narrowly or too widely (STDEV differences)



SWoRD intelligence

- Help reviewer give more helpful reviews
 - Localization
 - Solution
- Help writer write better essays
 - Thesis detection
 - Revision plan
- Our lab takes care of the NLP aspect of the above research problems

Future directions

- To support teachers
 - Currently student-centric
 - Solution, localization feedback
 - Thesis detection
 - Revision plan
 - Will be teacher-centric
 - Writing/review analytic
 - Class performance
- To support assignment design
 - Library/database that includes rubrics/prompts

SWoRD vs. ARROW

- Given its success, SWoRDTM Peer Assessment has recently become a trademark of Panther Learning Systems Inc.
- ARROW has been brought up as an alternative for research purpose at Pitt [arrow.lrdc.pitt.edu]
- SWoRDTM is now changing to PeerceptiveTM

 [www.peerceptiv.com]
- ARROW will be renamed to SWoRD soon!

Live demo

- arrow.lrdc.pitt.edu
- http://www.peerceptiv.com/wordpress/help/student-help/

References

- 1. http://www.peerceptiv.com/wordpress
- 2. Cho, K., & Schunn, C. D. (2007). Scaffolded writing and rewriting in the discipline: A web-based reciprocal peer review system. *Computers & Education*, 48(3), 409-426.
- 3. Gielen, S., Peeters, E., Dochy, F., Onghena, P., & Struyven, K. (2010). Improving the effectiveness of peer feedback for learning. *Learning and Instruction*, 20(4), 304-315.
- 4. Nelson, M. M., & Schunn, C. D. (2009). The nature of feedback: How different types of peer feedback affect writing performance. *Instructional Science*, *37*(4), 375-401.