Final Report: Screencasting to Foster Formative Assessment: Improving Undergraduate Disciplinary Writing

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Project Summary

The project entitled "Screencasting to Foster Formative Assessment: Improving Undergraduate Disciplinary Writing" addressed the need to improve upper-division undergraduate students' disciplinary writing by focusing on the relationship between feedback and development. We (Elizabeth Vincelette, Jennifer Kidd, and Tim Bostic) trained faculty who teach upper-level, writing intensive (W) courses how to use screencast technology to provide formative feedback on writing. Our vision for this plan was based on research on the efficacy of screencast feedback as part of a framework designed to encourage student reflection during the writing process.

With screencast feedback, an instructor provides students with video captures that allow students to see their papers from the vantage point of the instructor's monitor and to hear spoken comments. Students can see the instructor's cursor movements, scrolling, visits to websites outside the students' texts, and pre-created or on-the-fly annotations. Screencast feedback instruction was used as part of a larger, structured plan involving formative assessment strategies. Unlike summative assessment meant to evaluate performance at the end of a process (usually when grades are assigned), formative assessments include feedback on material to build mastery.

Specific strategies taught included (a) selection, management, and organization of screencast software; (b) work flow and best practices for screencast performance; and (c) scaffolding techniques for formative assessment, including the use of student reflective writings, especially what Yancey calls *constructive reflection*, which comes "between and among the drafts" (51).

The study recruited seven faculty from across the university who teach writing intensive courses in their disciplines; they were trained to use screencasts to provide formative feedback on student papers. Participants included Cindy Tomovic (STEM Education and Professional Studies), Phil Langlais (Psychology), Chung-Hao Chen (Electrical Engineering), Donna Rose (Nursing), Chris Osgood (Biology), Charlie Daniels (Engineering Management), and Tim Madden (Management).

The assessment plan included collection of quantitative and qualitative data including pre- and post-intervention student writing scores using the QEP rubric, two survey instruments, key-informant interviews, and focus groups. Surveys of students included questions regarding feedback types, feedback delivery mechanisms, and student self-evaluation of writing. Key informant interviews of the instructors and focus groups of students were conducted to ascertain the efficacy of this formative feedback method. This assessment plan incorporated all aspects of the QEP/IDW rubric, with particular emphasis on the sixth item, student reflection and evaluation.

Action Project data assessment and findings

When planning the research design for this project and the training we would conduct with faculty, we considered all six of the IDW Student Learning Outcomes. In particular, we focused on the IDW rubric. In training, we familiarized faculty with the rubric, practiced applying it to a sample paper, and then asked faculty to use the IDW rubric to assess student work and provide formative feedback, as well. Because our project focused on a feedback technique, we were able to address all SLOs, although indirectly through the faculty's use of screencasting.

We sent the questionnaire below to all seven faculty members; six responded.

Directions: Please estimate the percentage of your students who meet or exceed the student learning outcomes both before and after providing them feedback.

Student Learning Outcomes	Pre % meet/exceed	Post % meet/exceed
1. Students will be able to clearly state a focused problem, question, or topic appropriate for the purpose of the task.	55 50 25 30 60 60	75 80 80 60 90 80
2. Students will be able to identify relevant knowledge and credible sources	45 25 25 20 90 30	65 75 80 80 90 80
3. Students will be able to synthesize information and multiple viewpoints related to the problem, question or topic.	35 50 10 30 75 30	55 80 60 50 85 70
4. Students will be able to apply appropriate research methods or theoretical framework to the problem, question or topic.	30 25 25 30 75 60 80	40 50 80 50 85 90 80

5. Students will be able to formulate conclusions that are logically tied to inquiry findings and consider applications, limitations and implications	45	60
	25	50
	30	85
	25	60
	60	90
	60	90
6. Students will be able to reflect on or evaluate what was learned.	35	50
	25	75
	15	90
	20	70
	60	90
	70	90

Data Collection

Data from students were collected through a survey (Appendix A) that was sent to students using SurveyMonkey. All students from the seven instructors' classes were invited to participate through an e-mail invitation that was sent from their professors. The survey consisted of 20 of questions that made up four constructs of interest: how attentive and engaged the students were; the ability to incorporate the revisions suggestion; their perceptions of the feedback quality and quantity; and their preferences for using this type of feedback as opposed to the more traditional written comments given by instructors. The constructs were measured on a 4-point Likert-type scale with responses ranging from strongly agree to strongly disagree. Additionally, students were asked how many times they viewed the video of their paper and their gender.

During the same semester that students responded to the survey, we conducted focus groups with students, as well as separate semi-structured key-informant interviews with six of the seven instructors. Pseudonyms were used to protect the identity of the participants in this study. All of the participants had prior teaching experience, which ranged from several years to more than 15 years. Open-ended questions were used in order to encourage the students' and instructors' perspectives on screencasting, with a goal of maintaining a conversational experience. Focus groups and interviews were recorded and transcribed. The interview questions focused on instructors' use of screencasting software, particularly as a change from traditional grading methods, their perception of the quality of their screencasts, and their perception of students' reactions to the screencasts. For student focus group questions, the following questions were asked:

1. What are the advantages to receiving feedback via screencasting?
2. What are the disadvantages to receiving feedback via screencasting?
3. Compare written feedback you have received to feedback you received in screencasting. What are the differences?
4. What feedback was more effective in helping you improve your writing? Why?
5. Which did you prefer? Why?
6. Would you suggest other faculty use this method of feedback on writing assignments?

7. Is there anything else you would like to tell us about your experience receiving screencasting on your writing assignment?

For faculty, the following questions were asked:

1. How user friendly did you feel screencasting was?
   a. prompt: Did it save you time or cost you time?
   b. prompt: How much time in learning to use screencasting effectively did you feel was required?
2. Did you feel you were able to give more feedback using screencasting when compared to written comments?
3. Did you feel you were able to give better feedback using screencasting when compared to written comments?
4. From your perspective, how did the students respond to this mode of feedback?
5. From your perspective, did the students incorporate more of your feedback using screencasting when compared to written comments?
6. Did you feel using screencasting helped your students become better writers?
7. In a broad sense, how do you feel screencasting feedback compares to the more traditional written comments?
   a. Prompt: What were the benefits and costs of using screencasting?
8. Is there anything else you would like to say about your experiences using screencasting as a method of feedback?
9. Did your students use the feedback given in screencasts than they used text-based feedback? What evidence shows you this?
10. Would you use screencasting to provide feedback to students in the future? Why or why not?

Data Analysis Methods

Surveys

The survey data was analyzed using SPSS 21. Descriptive statistics were reported on the individual survey items and means were reported for the four constructs. Cronbach alphas were calculated to ensure the reliability of the constructs. They were very high, ranging from .91 for the attending/engagement to .98 for the preference construct.

Students had overwhelmingly positive responses. On every item, over 88% of students agreed or strongly agreed (see table below). The students clearly felt the feedback they received through screencasting helped them better understand how to revise their work when compared to feedback they had received in a traditional manner (50% strongly agreeing; 94% agreeing or strongly agreeing). Students also reported receiving more feedback when the instructor used screencasting as opposed to providing written comments, and that they understood the screencasted feedback better than traditionally delivered feedback. Over 90% of the students said they would prefer to receive feedback in this manner and recommend other instructors in their major use screencasting. Of the 34 students who responded, it appears all but three students had very positive experiences with screencasted feedback. Also see Appendix B.

Student Survey Responses (N=34)

Question	Mean	Strongly Agree	Agree	Disagree	Strongly Disagree
Attending/Engagement	**3.24**				
1. Compared to more traditional feedback, I think that I paid more attention to my instructor's comment with screencasting.	3.09	15%	79%	6%	0%
2. Compared to more traditional feedback, I think that screencasting helped me better understand how to go about revising my writing.	3.44	50%	44%	6%	0%
3. Compared to more traditional feedback, I think that screencasting made me a better writer.	3.21	27%	68%	6%	0%
Incorporation of Revision	**3.13**				
5. I gained a better understanding of how to organize my writing due to the feedback received through screencasting.	3.12	18%	76%	6%	0%
6. I was able to create better papers due to the feedback received through screencasting.	3.12	18%	77%	6%	0%
7. I was able to elaborate better due to the feedback received through screencasting.	3.12	21%	71%	9%	0%
8. I gained a better understanding of my issues with mechanics and usage due to the feedback received through screencasting.	3.09	21%	67%	12%	0%
9. I gained a better understanding of how to structure my papers due to the feedback received through screencasting.	3.18	21%	77%	3%	0%
Feedback quality/quantity	**3.19**				
10. When compared to other writing classes, I think I received more feedback on my writing in this class due to screencasting.	3.24	37%	55%	6%	3%
11. When compared to other writing classes, I think that I better understood the feedback on my writing due to screencasting.	3.26	38%	53%	6%	3%
12. When compared to other writing classes, the comments I received helped me understand what I needed to do to improve my writing due to screencasting.	3.21	30%	61%	9%	0%
13. When compared to other writing classes, I received feedback that helped me understand how to revise my papers beyond just issues with mechanics and usage.	3.18	30%	61%	6%	3%
14. When compared to other writing classes, I believe the feedback from the screencast helped me become a better writer.	3.21	30%	61%	9%	0%
15. When compared to other writing classes, I believe the feedback from screencasting helped me write better papers.	3.12	18%	76%	6%	0%
Preference	**3.21**				
16. I would prefer to receive screencasting feedback, as opposed to traditional written comments, to help me deal with mechanics and usage issues.	3.24	38%	53%	3%	6%
17. I would prefer to receive screencasting, as opposed to traditional written comments, to help me deal with organizational issues.	3.21	35%	56%	3%	6%
18. I would prefer to receive screencasting, as opposed to traditional written comments, to help me deal with issues pertaining to elaboration.	3.21	36%	55%	3%	6%
19. I would prefer to receive screencasting feedback, as opposed to traditional written comments, to help me deal with structural issues.	3.21	35%	56%	3%	6%
20. I would recommend that other instructors in my major use screencasting, as opposed to traditional written comments, in their classes.	3.21	36%	55%	3%	6%

Note: Items used a 4pt likert scale where 1= strongly disagree, 4 = strongly agree
Note: Items in red indicate very strong student agreement (35% or more strongly agree)

Most students watched screencasted videos between one and three times (see table below) with a few students reporting watching it four or more times. One nursing student reported watching her video close to 20 times.

How many times did you watch the screencasting video? (N=34)

Times Watched	Percentage of Students
1	30%
2	33%
3	24%
4	12%
5+	3%

Student Focus Groups and Faculty Interviews

The same procedure was used to analyze the data from the student focus groups and the faculty group. Three different codings were performed.

Before coding with the NVivo software, which is designed for qualitative data analysis, all four transcripts from student focus groups were copied and pasted into one Word file, and then questions were removed, along with all other instances of the faculty speaking during the focus groups. Likewise, the two faculty transcripts were compiled the same way. Transcriptions were placed into NVivo. Select quotes from the faculty key informant interviews are in Appendix C.

For the first coding using the Query Wizard in NVivo, we ran Word Frequency Queries to identify the top 50 frequently occurring terms in context. We set the parameters to allow for NVivo to select words with the same stem. From the results we generated Word Clouds, Tree Maps, and Cluster Analysis of the top 50 words in the student transcripts, the top 50 in the faculty transcripts, and the top 50 in the document with both student and faculty responses combined. Please see Appendix E for these results.

The second coding involved the creation of "nodes" in NVivo; "nodes" are what is also called themes in other qualitative data analysis. Using line-by-line coding, Vincelette identified the themes in the transcripts.

For the third coding, the transcripts were analyzed using a coding process based upon grounded theory (Charmaz, 2006; Clarke, 2005; Dey, 1999; Glaser, 1978, 1998, 2001; and Glaser & Strauss, 1967), in order to identify emergent themes. There were three coding steps used: gerund codings of the word frequencies using grounded theory; gerund codings of the interviews using grounded theory; and memo-writing (using grounded theory techniques) to elicit emergent categories, themes, and their overlaps. Gaps, questions, and analytic frames arose during the process (Charmaz, 2006), and core categories and subcore categories emerged (Glaser, 1998).

Discussion of Findings

Faculty interview data suggested the following themes:

Theme 1: *Needing time to learn the software.*

- working through frustration.
- adapting techniques.
- developing an individualized work process.

Theme 2: *Developing confidence over time.*

- becoming a better performer.
- learning to vary tone of voice and pace.
- enjoying the process of giving feedback.

Theme 3: *Feeling concerned about time.*

- not being able to provide screencast feedback to all students.
- not having time to provide formative feedback.
- wasting time learning software but eventually saving time.

Theme 4: *Willingness to change teaching.*

- experimenting with different software to provide better writing instruction.
- developing several ways to use the software, from feedback on papers to how-to instruction for papers or even adjunct staff.
- feeling motivated by positive student responses.

Theme 5: *Believing that students' writing improved.*

- feeling that better communication with students improved writing.
- noting that they tended to give more positive feedback than criticism, leading to improvement.

Word frequency results reveal that faculty are especially concerned with (a) use of time, (b) use of technology, (c) grading anxiety, (d) methods of commenting, (e) workflow patterns, (f) comparison to other feedback methods, and (g) perception of feedback (for both the instructors and students). These categories underscore the categories from the grounded theory codings and produce the same analytic frames. For faculty word frequency results, see Appendix E.

The following themes emerged during analysis of the student focus group data:

Theme 1: *Students use the screencasts in different ways.*

- Some watch feedback repeatedly and take notes.

- Some use screencast exemplars before and during writing.
- Some students use screencasts to prevent writing problems.

Theme 2: *Students believed they understood instruction better through screencasting.*

- Students felt professors' explanations of citation styles made more sense.
- Students noticed parts of the papers they would not otherwise have seen.
- Students perceived that they had more feedback on arguments and topics than on grammar and mechanics alone.
- Students believed that professors expressed themselves better than in other forms of delivery.

Theme 3: *Students had overwhelmingly positive reactions to screencast instruction and feedback.*

- Students better understand the professors' reasoning, the "why" of the instruction.
- Students experienced increased self-esteem.
- Students felt the instruction and feedback was more thorough.

Theme 4: *Students prefer hearing and seeing feedback and instruction.*

- Students understand better because they hear inflection and tone.
- Students understand the most when seeing and hearing are combined.
- Students feel that hearing and seeing allows thorough, specific instruction.

Theme 5: *Students respond emotionally to the screencasts.*

- Students remark that they believe instructors care more about their learning when they have received this type of feedback.
- Students compare the experience of receiving a large amount of feedback with screencasting as positive, whereas a lot of feedback in writing seems intimidating.
- Students believe that the amount of time professors take to produce the screencast correlates with how much professors want them to succeed.

For samples of faculty use of screencasting, please see Appendix D.

Word frequency results reveal that students are especially concerned with (a) understanding instruction, (b) expectations of professors, (c) clarity of instruction, (d) improving writing, (e) use of time, and (f) their emotional reaction to writing instruction. These categories underscore the categories from the grounded theory codings and produce the same analytic frames. For faculty word frequency results, see Appendix E.

Limitations

We believe that the use of screencasting for formative feedback improves writing instruction and student learning, yet there are limitations to our study. Students self-selected for participation in the surveys and the focus groups, and therefore volunteer bias is an issue. The small sample size also limits the degree to which these findings can be generalized.

In addition, we could not check directly for improvement in writing because we had no data directly related to writing; the instructors participating did. Having this study occur during one semester also prevented us from doing pre- and post- assessments because the study did not occur on a yearly calendar.

Students reported few problems with software, notably difficulty with the display on the screen (ghosting of the cursor, freezing). Some faculty likewise reported similar problems, but it was the learning curve for becoming familiar with the software that caused faculty the most trouble. Several faculty noted that we did not offer enough training in how to use the technology; however, not all faculty came prepared for training. Before the training, we asked faculty to download the software and set up an account. Because so few had done this before training, we had to use time allotted for practicing feedback to downloading the software. The time spent downloading software and creating accounts took away from training time.

Once the study had begun, several faculty members did not use screencasting in the manner discussed in our training. Instead of using the software to provide formative feedback, several faculty chose to create exemplar papers to model writing for students. Although this technique benefitted the students in those classes, our ability to draw conclusions from data was affected.

Finally, not all faculty attended the faculty focus groups, so not all were represented. Due to a scheduling conflict, we agreed to have a separate session with two faculty members; later, when our schedule changed, one of the two faculty members attended a second session; therefore, she has double the amount of representation in our data due to attending twice.

Recommendations and Conclusion

For future studies using formative feedback and screencasting, we would recommend that a larger sample of faculty and students be recruited in order to produce more generalizable results. We would also extend training to a two-day schedule, with one day focused on formative feedback and a second day devoted solely to hands-on training with the software. In addition, we would conduct this study over a longer period of time in order to be able to have pre- and post- data.

Feedback, an integral part of every course at ODU, affects all students. This study directly affected more than 300 students. Furthermore, training on screencast feedback and formative assessment can be adapted widely. Screencasting is transferable and useful for face-to-face, online, or hybrid classes because of its asynchronous delivery. Because of the flexibility of this method, we envision that participating faculty will continue to use screencasting, and we believe that more faculty throughout the university will want to learn this technique.

Findings will be disseminated at professional conferences and in scholarly articles. The authors of this study plan to continue working with this topic and seek publication in the *Journal of Writing Assessment*.

References

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APPENDIX A

Screencasting and Feedback: Student Survey
The goal of this survey is to assess the efficacy of screencast feedback and students' perceptions of and reaction to this feedback technique. The information will be used for research purposes. As such, the findings of the study will be published and/or presented at conferences. Before you being the survey, please be aware of the following:

- Your participation is entirely voluntary. You may choose to discontinue the survey at any time and/or choose not to answer certain questions.
- Your responses will remain anonymous and the course instructor cannot determine which survey you completed. Complete confidentiality will be maintained. At no time will your identity be revealed either by the procedures of the study or during reporting of the results.
- No negative consequence will result for choosing not to participate.

Directions: Please describe what you really think and feel; this information will be the most helpful in trying to find out how to improve the assessment process for students and faculty members in the future. During the course of the semester, you received feedback using screencasting. The questions will start by asking you general questions about receiving feedback on writing assignments, and then you will be asked to compare the type of assessment you have received in this course with the more traditional feedback (written comments from the instructor) usually received on writing assignments. Thank you for participating in this research.

Attending/Engagement:

1. Compared to more traditional feedback, I think that I paid more attention to my instructor's comment with screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

2. Compared to more traditional feedback, I think that screencasting helped me better understand how to go about revising my writing.

Strongly Agree	Agree	Disagree	Strongly Disagree

3. Compared to more traditional feedback, I think that screencasting made me a better writer.

Strongly Agree	Agree	Disagree	Strongly Disagree

4. On average, how many times did you watch the screencasting video.

0   1   2   3   4   5

Incorporation of Revision:

5. I gained a better understanding of how to organize my writing due to the feedback received through screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

6. I was able to create better papers due to the feedback received through screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

7. I was able to elaborate better due to the feedback received through screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

8. I gained a better understanding of my issues with mechanics and usage due to the feedback received through screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

9. I gained a better understanding of how to structure my papers due to the feedback received through screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

Feedback quality/quantity:

10. When compared to other writing classes, I think I received more feedback on my writing in this class due to screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

11. When compared to other writing classes, I think that I better understood the feedback on my writing due to screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

12. When compared to other writing classes, the comments I received helped me understand what I needed to do to improve my writing due to screencasting.

Strongly Agree	Agree	Disagree	Strongly Disagree

13. When compared to other writing classes, I received feedback that helped me understand how to revise my papers beyond just issues with mechanics and usage.

Strongly Agree	Agree	Disagree	Strongly Disagree

14. When compared to other writing classes, I believe the feedback from the screencast helped me become a better writer.

Strongly Agree	Agree	Disagree	Strongly Disagree

15. When compared to other writing classes, I believe the feedback from screencasting helped me write better papers.

Strongly Agree	Agree	Disagree	Strongly Disagree

Preference:

16. I would prefer to receive screencasting feedback, as opposed to traditional written comments, to help me deal with mechanics and usage issues.

Strongly Agree	Agree	Disagree	Strongly Disagree

17. I would prefer to receive screencasting, as opposed to traditional written comments, to help me deal with organizational issues.

Strongly Agree	Agree	Disagree	Strongly Disagree

18. I would prefer to receive screencasting, as opposed to traditional written comments, to help me deal with issues pertaining to elaboration.

Strongly Agree	Agree	Disagree	Strongly Disagree

19. I would prefer to receive screencasting feedback, as opposed to traditional written comments, to help me deal with structural issues.

Strongly Agree	Agree	Disagree	Strongly Disagree

20. I would recommend that other instructors in my major use screencasting, as opposed to traditional written comments, in their classes.

Strongly Agree	Agree	Disagree	Strongly Disagree

Please complete the following demographic information:

Gender: **Male:** □   **Female:** □

Age: **18-20:** □   **21-23:** □   **24-26:** □   **27-29:** □   **30+:** □

Class Level: Freshman: □   **Sophomore:** □   **Junior:** □   **Senior:** □

Appendix B

Student Survey Participants (N=34)		Percent
Gender		
	Female	71%
	Male	29%
Age Range		
	18-20	18%
	21-23	35%
	24-26	3%
	27-29	0%
	30+	35%
Class Level		
	Freshman	0%
	Sophomore	3%
	Junior	41%
	Senior	47%

List of Student Majors Represented*

*Names of majors as described by students.

Accounting (1)
Business Management (2)
Civil Engineering (3)
Communications (1)
Computer Engineering (1)
Computer Science (1)
Electrical Engineering (2)
Human Services (1)
Information Systems and Technology (2)
Marketing and Business Analytics (1)
Merchandising (1)
Nuclear Medicine & Technology (1)
Nursing (8)
Occupational Technical Studies (2)
Psychology (5)
Therapeutic Recreation (1)
Science (1)

Appendix C

Screencasting for Formative Assessment IDW Grant
Faculty Key Informant Interviews
Fall 2013

Below are a few select responses excerpted from raw data. Faculty said…

They really felt like now they really did see what I was talking about. Hearing me talk it through was really good. So the combination of using word changes, comments and track changes, scored and then talking through all that plus additional things was very productive for the students that took advantage of it.

The first few papers, I think I had 43 students and their paper was like 10-12 pages and the first few that I graded I thought "Oh boy, this is really time consuming." But as it went on, I could figure out not only some mechanics of it. How do upload them quicker and go from one thing to the next and send them back their length, but also when giving my feedback. In the end, I do think it was quicker to grade that way once I got up to speed with it.

I use it to give them feedback on their paper. I put up the rubric with their paper and I mark it up in advance and I screen capture everything. I am allowed to move as I am screen capturing…I am allowed to actually move the paper so that my rubric stands still but my paper…I can scroll with and show them things from page to page. The most difficult thing is that I can't tell you the positive impact that that had on the student in regards to them getting better because I always give students an opportunity to rewrite and have not set up my blackboard where there is first and second attempt.

I used it sort of with the sophomore students and their health assessment lab they do weekly. That was kind of my practice with it. I used it one week for all ten of their write-ups, just for me to really practice with it. Then the next week I didn't use it and they were so disappointed. "Can you go back and do that again." That was not the students you guys surveyed. I did end up continuing to use that with them, which got me in a little bit of hot water with the other lab faculty because the other students were envious that my students were getting this.

Yes, so what I would do….they post their papers in black board. I pull up the rubric over here. Love that rubric capability. I bring up their paper and what I will often do is with the paper I will put it in review mode and I will highlight something and then I will write some comments. Then I will walk them through the comments. They seem to just love that.

I would have to say it is the same but that is because I probably would give almost a three page written response to each of my students where you can cut and paste examples from their paper into my comments. What it did was massively changed how much time it took me to give them feedback. I was not writing a three page response to every student. It was a four minutes SnagIt response.

Below are a few select responses from student data. Students said…

He added a whole bunch of comments like…the paper was set up and he went through each section commenting on what he thought was good and what was left out, what he really liked about it and all of that.

… you do get to hear where your professor is coming from, where as an undergrad I am looking through this paper and looking for specific things, but I have a professor who is sitting there that can specifically point out this is good, this is why it is good. For example, he kept pointing out that they explained this point and they also used figures. This is something that I was not really thinking about when I put it together. But hearing the professor say "This is a really good way to back up your statement here, you used figures." Something I probably would have glossed over.

I think a lot of it is that you can hear the inflection in your professors voice too, so you can tell if they are really getting into it or really like it or if they are trying to criticize you a little more, whereas with the notes on the side you don't get their attitude towards the paper – just straight notes.

I am very visual so he was obviously explaining all of these things too, but just to see it on paper what it is supposed to look like was very helpful for me.

I loved it. I would prefer screen cast over the written comments just because…like I said, it is very personalized. You can kind of get their attitude or their mood through how their voice sounds. I feel like you can be more thorough. The professor can be more thorough and more descriptive of what you should have done or shouldn't have done.

I think I was able to understand the teacher better. I remember one of my papers from a research class was graded and the teacher said very nice intro, but I don't know why it is nice. There is no explanation and I had to read it again to see why it is nice just for myself to remember for the next time, but I still don't know why it was nice. Here, this paper, the teacher went through and she said she liked the way I said this in the intro or didn't like something. So she really pointed out certain points and she was able to express herself better than I guess you can in writing because you have to type so much. It was…I could understand her really well. She didn't just say it was wrong, she said why it was wrong.

I still think it was more like…personal contact because this is not intentional but it made me feel like she does look at every student as an individual and not just as a class as a whole.

For exams. It is extremely helpful. She gives us objectives with every class. She says these are the objectives for the day and then goes through the thing. I look at them, but the objectives don't connect in my head until she goes back through them before the test. This is what this is. This is where I am talking about this. These are pages in the text book where you can go look at it. Next objective and does the same thing. It pulls it together.

It is more expansive so there is more feedback than just…like I said, usually it is just highlighting. You got four out of four for this section. You got 10/15 for this section so it is more responsive. They tell you exactly why you did this. You can see in your paper what sections she was talking about. I guess she

highlighted it and inserted comments onto the paper. It is better to see. I knew exactly what she was talking about when she said…"Grammar, you got four out of five for this, that is why because in this part right here you really fumbled up the sentence."

I think we were critiqued more on content than actual writing mechanics. I mean we still had to follow the guidelines set forth in the syllabus and then we had criteria we had to meet that were outlined in the rubric, but I am sure there is an extra period or misplaced comma or something funny that didn't belong there. He was not concentrating on that.

Well usually when I see my papers there are not much comments on them. It is more like slashes and stuff like that or like arrows and stuff like that. But with her reading my paper and telling me what I got wrong she explained the slashes and the arrows and she highlighted some things. She said "I think you should rewrite your sentence this way. It would sound better." That helps a lot. I like that.

Appendix D

Sample Action Project writing assignments/materials developed and used

Links to projects:

| Feedback	http://www.screencast.com/t/N9mzXsI1oUlW
Feedback	http://www.screencast.com/t/OYzPhyaGl02p
Feedback	http://www.screencast.com/t/eNLOxVPY
Feedback	http://screencast.com/t/h9dy6WmOBc
Explaining an assignment	http://www.screencast.com/t/N9mzXsI1oUlW
Explaining an assignment	http://www.screencast.com/t/DMW4PvBJu
Orientation for clinical faculty	http://www.screencast.com/t/Wr258TZz

Appendix E

WORD FREQUENCY

TOP 50 FACULTY LIST

Word	Count	Similar Words
Get	150	beginning, bring, capture, capturing, come, comes, coming, contract, develop, experience, experiment, find, generations, get, gets, getting, going, let, make, makes, making, pose, received, start, started, starting, starts, take, takes, taking
Use	86	applied, apply, enjoyed, function, habit, practice, purpose, use, used, useful, uses, using
Think	91	consider, guess, intended, mean, reason, reasons, recall, remember, retriever, supposed, think, thinking, thought
Just	99	exactly, fairly, good, hard, just, justice, right, simply
Students	70	scholarly, student, students
Paper	76	document, documents, paper, papers, report
Like	70	compare, corresponded, like, liked, probably, similar
See	117	consider, control, experience, experiment, figure, figured, find, hear, hearing, learn, learned, learning, look, looked, looking, looks, meet, meeting, meetings, project, realize, realized, regard, regards, see, seeing, understand, understanding, view, views, visit, watch, watched
Really	72	actual, actually, real, really
Time	43	time, times, timing
Know	65	experience, experiment, intentionally, know, knows, learn, learned, learning, love, loved, recognized, wise

one	44	one, ones, single
class	68	class, classes, course, courses, family, form, forms, grade, graded, separate, sort, sorts, year, years
give	66	applied, apply, big, commit, generations, give, giving, hand, leave, liberal, make, makes, making, open, opened, pass, pay, presentation, spring
first	64	beginning, first, initial, initially, low, start, started, starting, starts
thing	40	matters, thing, things
feedback	37	feedback
writing	37	save, saved, write, writing
want	43	miss, need, needed, needs, private, want, wanted, wanting
well	46	advantage, comfortable, easily, good, health, well
comments	39	annotated, comment, commenting, comments, input, review, reviewed, reviewer, reviewing, reviews
talked	31	lecture, speaking, talk, talked, talking, talks, verbal, verbally
going	85	blend, fail, fit, function, going, last, leave, move, moving, pass, proceed, run, running, sound, sounded, sounding, sounds, start, started, starting, starts, survived, turn, turned, turning, work, worked, working, works
try	32	attempt, effort, essay, essays, hear, hearing, sample, tried, try, trying
snagit	27	snagit
screen	39	screen, show, showed, shows, sort, sorts, view, views
much	33	lot, much, often, practice
way	26	mean, mode, room, style, styles, way, ways
rubric	23	rubric, rubrics
positive	51	advantage, lay, office, place, plus, pose, position, positive, post, posted, put, putting, set, sets, side, situation, spot, stated, submit, view, views
back	32	back, second, stakes, support, supporting
tell	35	evidence, evident, narrate, narrated, narration, order, related, saying, separate, several, stated, tell
yeah	21	yeah
individual	28	individual, individualized, individually, individuals, person, personal, personality, personally, private, separate, several, single, somebody, someone
kind	25	form, forms, kind, sort, sorts
question	23	doubt, head, headings, interviewing, question, questions, wonder, wonderful, wondering
video	19	video, videos
week	19	week, weekly, weeks
now	21	now, presentation
got	17	got
assignment	22	assign, assignment, assignments, put, putting
actually	34	actual, actually, real, realize, realized
show	41	demonstrate, evidence, evident, point, pointed, points, presentation, read, reading, reads, record, recorded, recording, show, showed, shows
casting	27	casting, castings, form, forms, frame, framing, project, put, putting
something	16	something
sure	16	certainly, sure
make	49	build, builds, clear, clearly, create, form, forms, hits, make, makes, making, preparation, ready, realize, realized, scored, take, takes, taking, work, worked, working, works
started	45	beginning, initial, initially, jump, part, parts, popped, start, started, starting, starts
come	40	amount, approach, come, comes, coming, derivatives, fairly, fall, follow, followed, following, number, occur, seem, seemed, seems, totally
two	15	two

TOP 5O WORDS FACULTY WORD CLOUD
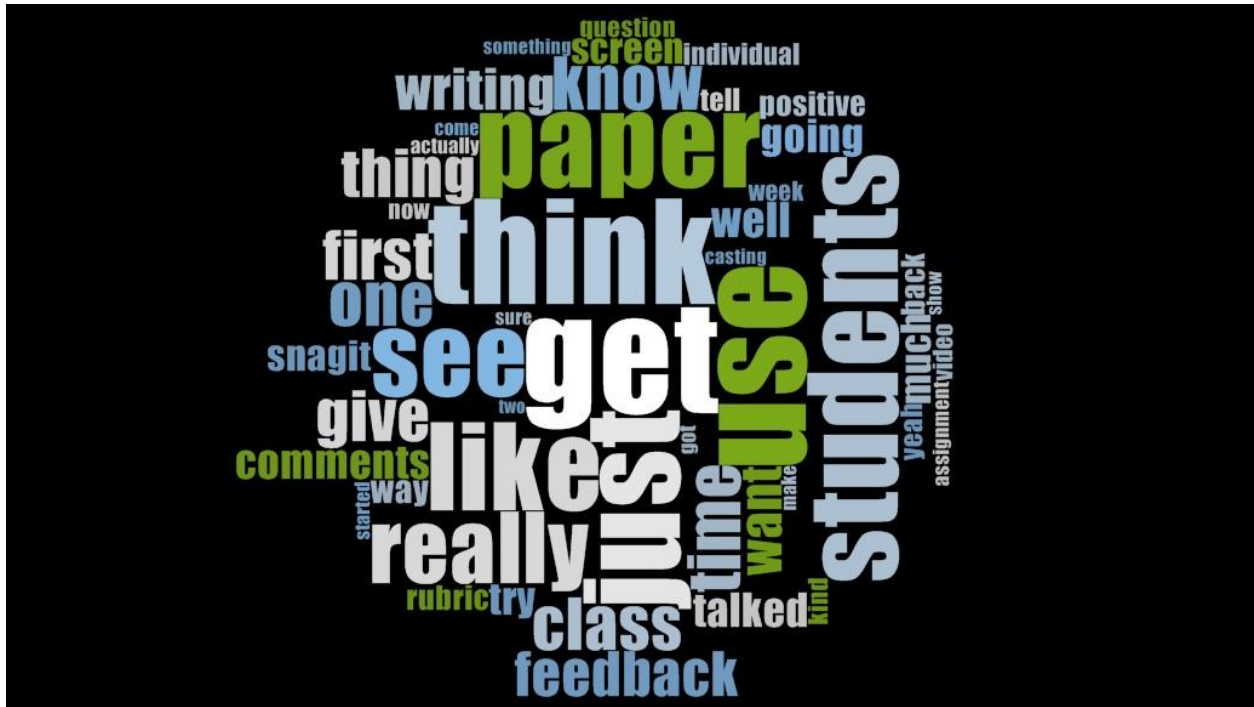
TOP 50 STUDENTS LIST

Word	Count	Similar Words
like	162	care, caring, like, liked, likes, probably, similar, wish
paper	146	composition, documents, paper, papers
think	172	guess, imagine, mean, meaning, means, reasons, recall, recalled, remember, remembering, retrieve, supposed, think, thinking, thinks, thought
just	165	exactly, good, hard, just, right
get	152	beat, beginning, captures, come, coming, experience, experiences, find, fix, get, getting, going, let, make, makes, making, receive, received, receiving, started, take, takes, taking
see	144	check, checked, checking, experience, experiences, figure, figures, find, hear, hearing, interpretation, learn, look, looked, looking, meet, meeting, picture, project, see, seeing, understand, understandable, visual, visualize, visually, watch, watched
really	69	actual, actually, really
class	75	class, classes, course, grade, graded, grades, grading, sort, sorts, year, years
know	68	experience, experiences, intentional, know, knows, learn, live, loved
instructor	54	instructor, instructors, teacher, teachers
good	96	beneficial, depends, good, honestly, right, safe, sound, sounded, sounds, thorough, thoroughly, well
feedback	53	feedback, feedbacks
lot	57	bunch, circle, circled, circling, deal, lot, lots, much, portion, scoring, set, setting, ton
feel	81	experience, experiences, feel, feeling, find, look, looked, looking, opinion, opinions, sense, tone, touch, touched
kind	48	kind, kinds, sort, sorts
read	78	interpretation, learn, read, reading, record, recorded, recording, saying, show, shows, studies, study, studying, take, takes, taking, understand, understandable, version
casting	52	cast, casting, casts, project, put, putting
screen	53	cover, covered, screen, show, shows, sort, sorts, test, tests
comments	50	comment, commentary, commented, commenting, comments, glossed, input, noticed, review, reviewed, reviews
time	38	sentence, time, times
back	42	back, cover, covered, second, seconds, supporting
writing	40	composition, save, saved, spelled, write, writes, writing
need	57	ask, need, needed, required, take, takes, taking, want, wanted, wants
things	35	thing, things
talk	35	lecture, lectures, speaking, talk, talked, talking, verbal, verbally
even	33	even, evenly, level, regular, still, yet
make	82	clear, create, fix, give, gives, giving, make, makes, making, scoring, take, takes, taking, work, worked, working, workings, works
used	32	apply, role, use, used, uses, using, utilize
personal	29	individual, person, personal, personalize, personalized, personally, somebody, someone
helpful	30	assistance, help, helped, helpful, helps, portion, services, supporting
better	29	best, better, improve, improvement
point	38	detail, details, directed, head, headings, level, period, place, point, pointed, pointing, points, show, shows, stages
sure	25	certain, certainly, sure
going	70	belong, failed, going, last, leave, live, moving, operations, run, sound, sounded, sounds, spelled, started, turn, turned, turning, work, worked, working, workings, works, x'd
got	24	got
yes	24	yes
grade	47	grade, graded, grades, grading, level, mark, marked, marking, place, scoring
section	26	part, parts, section, sections
one	21	one, ones, single

| little	21	little, short
bit	29	acted, bit, minute, minutes, moment, second, seconds, turn, turned, turning
something	20	something
give	41	apply, big, give, gives, giving, hand, hands, leave, open, opening, present, presentations, presented, presenting
next	24	follow, following, follows, future, next
student	19	student, students
wrong	19	incorrect, wrong
way	30	directed, mean, meaning, means, way
hear	37	hear, hearing, listen, listened, listening, tried, try, trying
guess	38	guess, judge, judged, judging
professor	18	prof, professor, professors

TOP 50 STUDENTS WORD CLOUD

TOP 50 STUDENTS AND FACULTY TOGETHER

Word	Count	Similar Words
like	701	care, caring, compare, compared, corresponded, like, liked, likes, probably, similar, wish
paper	667	composition, document, documents, paper, papers, report
think	791	consider, guess, imagine, intended, mean, meaning, means, reason, reasons, recall, recalled, remember, remembering, retrieve, retriever, supposed, think, thinking, thinks, thought
just	792	exactly, fairly, good, hard, just, justice, right, simply
get	912	beat, become, beginning, bring, capture, captures, capturing, come, comes, coming, contract, develop, experience, experiences, experiment, find, fix, generations, get, gets, getting, going, let, make, makes, making, pose, receive, received, receiving, start, started, starting, starts, take, takes, taking
see	778	check, checked, checking, consider, control, experience, experiences, experiment, figure, figured, figures, find, hear, hearing, interpretation, learn, learned, learning, look, looked, looking, looks, meet, meeting, meetings, picture, project, realize, realized, regard, regards, see, seeing, understand, understandable, understanding, view, views, visit, visual, visualize, visually, watch, watched
really	422	actual, actually, real, really
use	364	applied, apply, enjoyed, function, habit, practice, purpose, role, use, used, useful, uses, using, utilize
class	428	class, classes, course, courses, family, form, forms, grade, graded, grades, grading, separate, sort, sorts, year, years
know	398	experience, experiences, experiment, intentional, intentionally, know, knows, learn, learned, learning, live, love, loved, recognized, wise
feedback	282	feedback, feedbacks
students	272	scholarly, student, students
time	244	sentence, time, times, timing
good	462	beneficial, depends, effective, effectively, full, good, honestly, practice, respect, right, safe, skill, sound, sounded, sounding, sounds, thorough, thoroughly, well
thing	225	matters, thing, things
give	407	applied, apply, big, commit, generations, give, gives, giving, hand, hands, leave, liberal, make, makes, making, open, opened, opening, pass, pay, present, presentation, presentations, presented, presenting, spring
comments	269	annotated, comment, commentary, commented, commenting, comments, glossed, input, noticed, review, reviewed, reviewer, reviewing, reviews
read	449	interpretation, learn, learned, learning, read, reading, reads, record, recorded, recording, saying, show, showed, shows, studied, studies, study, studying, take, takes, taking, understand, understandable, understanding, version
writing	234	composition, save, saved, spelled, write, writes, writing
screen	281	cover, covered, screen, show, showed, shows, sort, sorts, test, tests, view, views
kind	218	form, forms, kind, kinds, sort, sorts
one	197	one, ones, single
want	252	miss, missed, need, needed, needs, private, required, want, wanted, wanting, wants, wish
casting	242	cast, casting, castings, casts, form, forms, frame, framing, project, put, putting
feel	344	experience, experiences, experiment, feel, feeling, find, look, looked, looking, looks, opinion, opinions, sense, tone, touch, touched
talk	195	lecture, lectures, speaking, talk, talked, talking, talks, verbal, verbally
back	221	back, cover, covered, second, seconds, stakes, support, supporting
instructor	169	instructor, instructors, teacher, teachers
much	225	lot, lots, much, often, practice
going	463	belong, blend, fail, failed, fit, function, going, last, leave, live, move, moving, operations, pass, proceed, run, running, sound, sounded, sounding, sounds, spelled, start, started, starting, starts, survived, turn, turned, turning, work, worked, working, workings, works, x'd
part	255	component, components, divided, function, leave, office, part, parts, piece, portion, role, section, sections, separate, share, start, started, starting, starts, voice, voices
first	246	beginning, first, initial, initially, initiative, low, start, started, starting, starts

personal	159	individual, individualized, individually, individuals, person, personal, personality, personalize, personalized, personally, pose, somebody, someone
way	169	directed, mean, meaning, means, mode, room, style, styles, way, ways
got	122	got
sure	122	certain, certainly, sure
point	204	degree, detail, detailed, details, directed, head, headings, level, period, place, point, pointed, pointing, points, show, showed, shows, spot, stages, tip
helpful	140	assistance, available, help, helped, helpful, helping, helps, portion, serves, services, support, supporting
even	152	equal, even, evenly, level, regular, still, yet
something	108	something
better	120	advance, best, better, improve, improvement, improvements
put	239	assign, assigned, assignment, assignments, commit, lay, order, place, pose, position, positive, put, putting, set, sets, setting
make	342	build, builds, clear, clearly, create, fix, form, forms, hits, make, makes, making, preparation, ready, realize, realized, scored, scoring, take, takes, taking, work, worked, working, workings, works
yeah	103	yeah
grade	213	degree, grade, graded, grades, grading, level, mark, marked, marking, order, place, scored, scoring
hear	196	hear, hearing, listen, listened, listening, tried, try, trying
lot	191	bunch, circle, circled, circling, circumstance, deal, load, loading, lot, lots, messes, portion, scored, scoring, set, sets, setting, ton
rubric	93	glossed, rubric, rubrics, title
bit	160	act, acted, bit, minute, minutes, moment, number, piece, second, seconds, spot, turn, turned, turning
little	103	little, short, small

TOP 50 STUDENTS PLUS FACULT WORD CLOUD
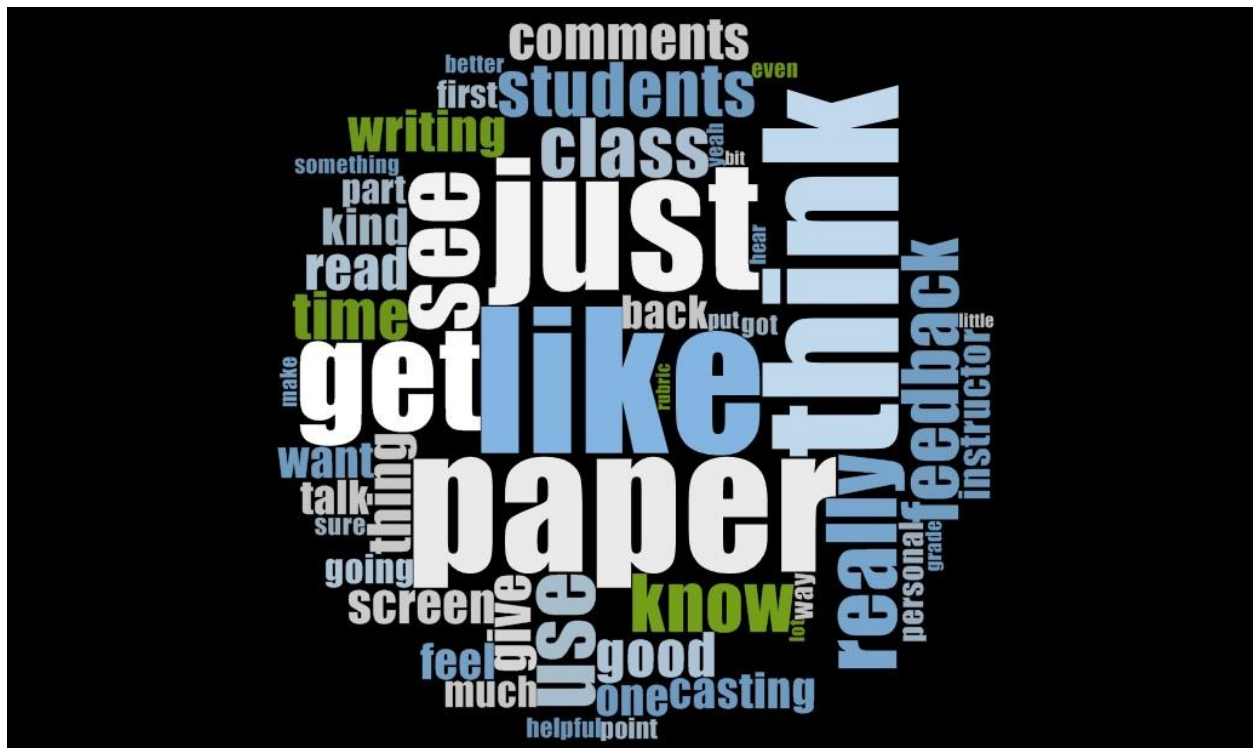
TOP 50 STUDENTS PLUS FACULTY BALL CLUSTER

Word Frequency Query