

Describe the action you took in this cycle.

1. The “What’s for Lunch?” Unit Plan

Cycle Two’s unit plan (See **Appendix E for specific learning activities**) centered on a theme titled “WHAT’S FOR LUNCH?” First I decided upon my desired results and chose my goals for this unit. I reviewed the National Educational Technology standards for students and chose to focus on:

NETS*S #2: Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

NETS*S #3: Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

NETS*S #4: Students use telecommunication to collaborate, publish and interact with peers, experts, and other audiences

NETS*S #5: Students use technology tools to process data and report results.

NETS*S #6: Students use technology resources for solving problems and making informed decisions.

I wanted students to understand that they can educate and influence other students about healthy eating and reducing lunch waste. I also wanted students to be aware that effective design can enhance a message being displayed.

I decided my Essential Questions were: Are the lunches at VCS healthy, affordable and low in waste? Using technology, what is the best way (for you) to influence student’s attitudes towards healthy eating and reducing lunch waste?

I determined that my technology skill goals would be:

- Microsoft Word has many desktop publishing features (fonts effects, Word Art, Auto Shapes, borders, text boxes, shadow, 3-D)
- Microsoft Excel is used to input and analyze data, and to present information in a visual manner.

Specifically, I wanted students to be able to students will be able to research nutritional information (calories, fat, carbohydrates) for food items. I wanted to show them how to add data (nutrition, cost, and waste scores) to a shared Google spreadsheet and write basic and advanced functions in Excel to analyze lunch data. I wanted students to use desktop publishing features to create an effective poster. The final task was to use mail merge to send multiples copies of a letter OR use Audacity to record and edit an audio message.

I decided on three performance tasks that I would use to evaluate their learning:

1. Lunch Data Collection: Each student will take photos of 4 different lunches and enter data (nutrition, cost and waste) about those lunches onto a shared Google spreadsheet. Students will then analyze the data using basic and advanced functions.
2. Students will create a poster using desktop publishing features (Word Art, borders, text boxes, etc) to influence student's attitudes about one area.
3. Students will choose between writing a persuasive letter to a newspaper editor or publish a podcast trying to influence people's opinions about lunch nutrition, cost or waste.

Other evidence that I would gather would be asking students to evaluate their Excel spreadsheet and graph with a scoring rubric. I would give two quizzes to check for understanding of how to write formulas and Excel & Word vocabulary terms. I would use a skills rubric for formatting features in Word. The students would also be asked to self-assess the spreadsheet they made and their overall work during this unit. The journal module and blog in Moodle was used for metacognition.

2. Planned Learning Activities

I followed the planned learning activities and only made a few modifications. Our topic was very timely since there had been quite a few articles in the local newspaper about banning junk food from schools and earthy friendly practices for school settings. Focusing on both school lunches (nutrition, cost, and waste) and lunch recycling allowed students to choose which topic interested them the most when selecting and creating projects.

We spent one week photographing actual lunches from our school. As the students collected the information about lunches they entered the nutritional content (calories, carbs, and fats) using a Google shared spreadsheet. Everyone contributed to the collection of data. Students then analyzed the data to determine daily averages and graphed the results. Using the gathered data, students then planned one week of lunches to reflect one specific focus, such as low-fat lunches. Students were instructed to format the spreadsheet in an effective manner. Students were also tested on their knowledge of excel vocabulary terms and understanding of how to write formulas. I conducted individual conferences with each student after the quiz so I could review specific errors and have some time for individual instruction.

The next activity was to create a one page poster to educate or influence student's decisions or attitudes towards lunch nutrition, cost effectiveness, or reducing lunch waste. Students were required to use any eight desktop publishing features from Word (such as: page border, word art, diagrams, text boxes, etc) to create a poster where they could educate or influence others. For example: make a poster encouraging students to make healthy food choices, or suggest bringing a lunch from home to reduce lunch waste. Due to time constraints, I decided to wait and give the Word vocabulary quiz during the next cycle.

The final assignment in the "What's for Lunch?" unit gave students choice on the delivery of trying to persuade a larger community about one aspect of school lunches or lunch waste recycling. Students had the choice either to write a mail-merge letter or create a podcast. Many students chose to write letters to Oregon state representatives since there was a bill that was going to the state senate about banning junk food in public school. Three pairs of students chose to record a podcast. After the first drafts of their projects were written, students reviewed each other's work using the

“track changes” feature of Word. The final drafts were printed and mailed to newspaper editors and State legislators. The students who chose to podcast their message learned how to record and edit audio tracks.

Since some of the podcast students had some technical difficulties and needed more class time, so I inserted an extra “mad lib” assignment to reinforce the steps of a mail merge. Students wrote funny short stories and then removed critical words (nouns, numbers, verbs, etc). They set up a mail merge for other students to fill in the missing words. The final stories were strange but garnered a few laughs. All of the groups were successful with this extra assignment.

Describe the data that you collected that is relevant to this cycle.

1. Qualitative data

Weekly, I blogged my observations about what happened in my classroom during the WHAT’S FOR LUNCH? Unit. This blog is located at <http://ccassinelli.blogspot.com/> and copies of the posts are in **Appendix D**. **Appendix E** is the WHAT’S FOR LUNCH? project plan used by the teacher.

During my Action Research I utilized several assessment modules in Moodle. This included a student blog, journal entries that were submitted directly to the teacher and surveys.

Below are highlights from observations from my blog entries:

- I observed: Students helping each other insert rows in the spreadsheet, Students searching and finding nutritional data about food items, Comments like: "This is so cool", "this is amazing", Students asking each other where they found their information, and Students actively working on the assignment for over 40 minutes
- I was a bit disappointed that some students were still having difficulties with basic functions. I realized one student had missed several days of class and probably is just guessing how to write formulas and the other one sits near the back of the room and I wonder how well they pay attention.
- I decided to have one-on-one conferences to go over the quizzes and their last Excel project with each student. This is giving me the opportunity to re-teach some skills and check for understanding.
- Students used the reference page often to learn make the poster.
- There was a lot of interaction between the students about how they were customizing the features for their poster.
- Many times I observed them re-recording sections to make it just right. All of the groups imported short audio segments for the intro music to the podcast. All three groups were completely engaged during the class sessions and were having fun too!
- My goal in doing the letter campaign was to give students an **authentic** reason for learning how to write a formal business letter and to learn the steps of a mail merge letter. One student summed up his feelings, "I don't know if my letter will make any difference but at least they know how we teenagers feel".

A quiz was given to check for understanding of Excel vocabulary terms and the student’s ability to write formulas. An analysis of the results showed:

QUIZ	% passed greater 70%	% failed less 70%	Class Average
Section One: Excel vocabulary terms	83.3%	16.6%	85%
Section Two: Writing formulas	50%	50%	62%
Total			77%

After the quiz I held individual conferences with the student to review the material. I collected these comments from the students during the conferences:

- I mixed up the definitions of a formula and function.
- I knew how to write the formula; I just wasn’t sure which cell references to use.
- I don’t have any difficulty with basic functions.
- Since the summary was separate from the data, I found it challenging to write the formulas.
- I can get the formula to work on the computer with the help of the Insert Function button; I just have a harder time writing them out during a quiz.
- The AutoSum functions make it easy to calculate totals and averages.
- I chose the correct numbers for the formula – I just missed some of the punctuation on the formula and that wouldn’t happen if I was using the computer.
- I didn’t study the vocabulary before the test.

Students were asked to self-evaluate their spreadsheet for Excel Assignment #1 using the following rubric. Students had an opportunity to make correction to their assignment after evaluating their work.

Please rate your SPREADSHEET for the following items:	Student Pre-Evaluation					Teacher Post-Evaluation				
	Poor	OK	Good	Very Good	Excellent	Poor	OK	Good	Very Good	Excellent
There is a clear title that is centered across columns	0%	0%	10%	20%	70%	0%	0%	0%	0.5%	94%
Labels are formatted in a way to make them noticeable	0%	10%	0%	20%	70%	0%	0%	0%	33%	67%
Basic Formulas (sum, average) are calculated correctly	0%	0%	10%	0%	80%	0%	0.5%	0.5%	0.5%	83%
Advanced Formulas (countif, sumif) are calculated correctly	0%	0%	10%	10%	70%	0%	0%	0%	0%	100%
Spreadsheet is formatted in an attractive manner.	0%	0%	0%	40%	60%	0%	0%	0%	0.5%	94%

Students were asked to self-evaluate their chart for Excel Assignment #1 using the following rubric. Students had an opportunity to make correction to their assignment after evaluating their work.

Please rate your CHART for the following items:	Student Pre-Evaluation					Teacher Post-Evaluation				
	Poor	OK	Good	Very Good	Excellent	Poor	OK	Good	Very Good	Excellent
Chart has clear & specific title	0%	0%	10%	20%	70%	0%	0%	0.5%	72%	22%
The chart type is appropriate for the data	0%	0%	0%	40%	60%	0%	0%	0%	0%	100%
All appropriate data is included on the chart	0%	0%	10%	20%	70%	0%	0%	0.5%	0.5%	89%
The chart contains labels or includes a legend	0%	0%	10%	20%	80%	0%	0%	0%	22%	78%
The chart is formatted in an attractive manner.	0%	0%	10%	20%	70%	0%	0%	0%	0%	100%

A rubric was used to evaluate the Lunch poster. This evaluation was done by the teacher.

Desktop Publishing Poster skill:	Class Average (18 students)	
Completed on time	16	89%
Use at least 8 different Word skills	18	100%
Has persuasive message or is informative	16	89%
Effective layout and design	15	83%
Overall score	90%	

WHAT'S FOR LUNCH? – Cycle Two Evaluations 5/1/07

1. What year are you?
 - a. Freshmen – 11
 - b. Sophomore – 3
 - c. Junior – 2
 - d. Senior – 2

2. Which desktop publishing feature was the most beneficial to learn this term (multiple answers allowed)
 - a. Page border – 5
 - b. Word Art – 6
 - c. AutoShapes – 5
 - d. Text Boxes – 10
 - e. Diagram / Organizational Chart – 8
 - f. Insert Clip Art & Edit Picture – 6
 - g. Line / Arrow options 3
 - h. Shadow – 3
 - i. 3-D – 5
 - j. Font Effects – 5
 - k. Fill Color / Effects – 6
 - l. Align / rotate / flop – 6
 - m. Track Changes – 11
 - n. Other – 1 - Header / Footer & Indents

3. Which statement(s) best describe your opinion about the WHAT’S FOR LUNCH? project (multiple answers allowed)

- a. I enjoyed taking photos of people’s lunch for data collection – 4
- b. I enjoyed using Google shared spreadsheets for data collection – 4
- c. I learned new desktop publishing features when I created my poster – 11
- d. I learned how to record a podcast – 9
- e. I learned the steps of a mail merge letter – 11

4. Please rate your understanding of the following Excel skills:

	I still have difficulty with this skill	I need some help with this skill	I am comfortable with this skill	I could teach another student this skill
Formatting the spreadsheet	0	1	11	6
Writing a formula	0	0	11	7
Creating a graph	0	2	9	7

5. What suggested do you have for how the WHAT’S FOR LUNCH? project could be improved in the future (be specific: lunch data collection, poster, mail merge, or podcast)

- a. I thought it was pretty good to be honest
- b. During the lunch data collection, it might give better data if people take a picture of variety of lunches from home, school, etc..
- c. More time to collect data
- d. I liked how we did it.
- e. I don’t have any
- f. None
- g. Can’t think of anything, sorry
- h. I think that the podcast was a very good idea for a project. It gets the work done while at the same time you can play around and add in sound bites and things like that. I enjoyed it a lot.
- i. For the podcast, we could learn more specifically how to add songs, or edit in a way that doesn’t seem choppy when you listen to it.
- j. Nothing that I can think of. It had been taught very well. Going online and using different search engines to find out the information required made it fun.
- k. Maybe put something in the paper to let other kids know and also let parents know.
- l. Instead of taking pictures of the lunches, there should be a log in which the lunch is written down. The pictures can be obtained from Google images.
- m. I think we could have come up with a more interactive way to use the info.
- n. The only improvement I can think of is that instead of looking at all of the lunches it should be focused on what is most popular. That way people would have a better understanding of they like and normally eat.
- o. I ‘m not sure I think that the project went well and it was informative.
- p. I think lunch data should come from one specified site; some data doesn’t match even though the data contains same food.

6. Evaluate how well your group worked together on the mad lib mail merge project.

	The statement is false	The statement is partly true	The statement is true
Everyone contributed to the writing of the mad lib	2	5	11
Everyone contributed when we went to the other groups to enter data	0	3	15
Everyone in our group understands how to do a mail merge	1	5	12

7. On a scale of 1-5 rate your teacher on the follow items:

	1 Poor	2 Just Ok	3 Good	4 Very Good	5 Excellent
Knowledge of technical skills	0	0	1	1	16
Availability for help	0	0	2	4	12
Feedback given to you about your progress	0	0	3	8	7
Ability to teach new skills	0	0	1	1	16
Friendliness	0	0	0	2	16
Motivates me to learn	0	0	5	6	8
TOTAL	0	0	12	22	75

8. An effort was made during this Unit to give more direct instruction for technology skills.

Was this helpful? Did you feel you needed it in order to be successful?

- a. Yes, this was helpful. I feel I can learn better when the information is direct and not done through a project.
- b. It was very helpful to learn many technological skills. With all the skills that we learned we were able to organize the data and make attractive looking posters. It might even help me later on when I need to work with Excel or Word Art.
- c. Yes, it did.
- d. Yeah, it was – except I didn’t need much help but when I did – it was effective.
- e. Yes, learning the technological skills is the reason I signed up to take the class.
- f. This was sort of helpful because I have taken a course like this before. The best and most important thing I have learned so far is how to track changes in Word.
- g. Yes, this was very helpful. It motivated me to do even better.
- h. Yes, I do think it was needed.
- i. Yes, to both questions.
- j. Yes, it was helpful, and since this was all new, it helped me in order to be successful, that there were specific instructions on what to do.
- k. Learning how to do a mail merge – it makes writing a letter a much faster process than before.
- l. I thought it was helpful and it did benefit me.
- m. Yes, it was needed.
- n. I thought that most of the stuff we learned was fun and useful - the mail merge, for example. I told my mom about it and she was like “Oh, show me how to do that when we get home, that’s how I will do my thank you letters from now on”.

- o. Since I did not have a lot of understanding of computer skills at the start – and I do now – I’d say it was helpful and necessary.
- p. I think it this was helpful and it was necessary to be successful.
- q. Yes, it was helpful, and those technology skills are used during this whole unit.

9. During the next cycle, you will be asked to create a PowerPoint presentation. What is your experience with PowerPoint?

	I have never done this before	I need a lot of help with this skill	I could do this skill with a little help	I am comfortable with this skill
Creating PowerPoint slides	0	0	2	16
Changing the slide design	0	0	4	14
Adding animations	2	0	6	10
Using the “master slide” template	3	4	7	4
Using and adding “action buttons”	4	2	7	6
Adding sounds or video	3	5	4	6

What it means--give an analysis of your data

After completing Excel Assignment #1, students were instructed to fill out a pre-evaluation survey before printing their project. Students scored themselves on the assessment and then, if they chose, they could change or improve their project based on the scoring rubric. Overall as a class, almost every category’s score increased after the students reviewed the rubric. The one exception was writing a clear title on the chart. Even though oral instructions were given to the students that the title needed to be specific to the data, 72% of the students included a basic title on their chart – but it wasn’t specific enough.

Checking for understanding in Excel was critical in Cycle 2. My observations of students in class showed that students were doing well entering data into spreadsheets and could write basic functions with little help. Students quickly grasped more advanced functions and used them in their Excel project. However, the students did not perform as well on the written formula quiz. Only 50% of the students passed that section, whereas 83% passed the Excel vocabulary section. I conducted individual conferences with the students after they turned in their Excel Projects and quizzes and many students commented that they found the formula section of the test to be confusing to them because the spreadsheet layout was quite a bit different than what they were used to in class. Also, students reported that they felt like they could have figured out how to get the formulas to work if they were on a computer, but writing it out on paper was difficult for them. Further testing both on the computer and with written forms is necessary to check for improvements.

On the Cycle 2 survey 94% of the students commented that they were comfortable or could teach another student how to format an Excel spreadsheet. All of the students gave themselves high marks for writing formulas and 89% were confident in their ability to create a chart. My observations agree with these results. There are only two students who I feel still need additional instruction with basic formula writing. The other students are ready for more advanced Excel work.

61% of the students commented that they learned new desktop publishing features when they created the lunch/recycle poster. The high-quality of the posters earned high marks for nearly all students. Every student used the required formatting skills and most of the students created an effective message and attractive layout and design. Students shared with me that they enjoyed seeing their posters hung near the cafeteria. After reviewing my skills inventory, I have determined that only a few more desktop publishing skills need to be reviewed before the end of the term.

The mail merge and podcast assignments were given high ratings by the students – not only because they were “fun” but useful skills to learn. Students also found it beneficial to learn how to use “track changes” and adding desktop publishing features (like text boxes and diagrams) to documents. Students reported that they like learning new skills. I will survey the students to determine what other technology skills they still want to learn this term.

Students stated that they liked having written requirements and instructions for the WHAT’S FOR LUNCH? assignments. Student felt like the extra direct instruction during cycle 2 was beneficial and helped them to be successful. Having the written instructions was also important for absent students who were involved in spring sports and I could also post the written directions on our class Moodle site – which can be accessed from home.

Generally, the assignments in cycle 2 were done more on an individual basis instead of in groups. This was done on purpose since cycle 1 assignments were more collaborative in nature. Students did collect data together for the Excel assignments and shared addresses for the mail merge on a Google shared spreadsheet (there were lots of positive comments about learning and using the Google spreadsheets). Those that chose to record a podcast worked in pairs. I observed some students who worked well independently but others seem to crave interactions with their classmates. Even though students worked independently, the class members are a lot more comfortable with each other and are more willing to ask each other for help.

The teacher received somewhat higher marks this cycle in all areas that were evaluated. All areas were marked “Good” or higher – with improvements made in feedback and ability to teach new skills. I felt like the individual conferences were critical for me in receiving feedback from the students about their understanding of course objectives and their opinions about the formula section of the quiz. I also was able to get information about their experience in using PowerPoint which will help me customize my instruction during the next cycle. Student report they are comfortable with basic PowerPoint skills, but have not even used some of the advanced features at all.

Describe what you will do in the next cycle.

During the next cycle I will continue to provide lessons for students to create authentic projects with authentic audiences – but students will have more choice during this cycle.

After reviewing the National Technology standards for students and my scope and sequence of skills, I determine that students still exposure to more desktop publishing skills (columns, section breaks, drop cap, customized borders) but also review some general paragraph formatting skills (indents, before/after spacing, styles, and outlines). My plan is to list these technology skills for the

students and give them some options on how we can use them in a project and let them decide as a class how to demonstrate their understanding. Some of the options will be: a class newspaper, a basic website, Word tutorials, etc. By allowing students to choose the format of their project I am hoping to increase ownership and engagement in learning.

We have not covered any PowerPoint skills this semester so the final capstone project of the term will be an integrated PowerPoint and Excel project. Students will be given the opportunity to choose any educational topic that is of interest to them and one that they could teach their classmates about. First they will determine prior knowledge by designing an Excel survey about their topic. Once they have collected that information, students will design an interactive PowerPoint presentation on their chosen topic. Direct instruction of the following PowerPoint skills will be covered: opening a Word outline in PowerPoint, creating a slide master, custom animation, action buttons, and adding sound or video to PowerPoint. Each PowerPoint project from the class will be linked together on a main project so all students can view each other's projects.

The final days of class instruction will incorporate a "Choose your own Techventure" time – where students can pick any type of technology that we have at school and work individually or in groups to explore the software tools.

What will be different between this cycle and the next cycle?

This next cycle will incorporate more opportunities for students to choose the format of their assignments. I hope to have the students reflect in their blogs to see if choice makes a difference in their learning or not. I plan on making careful observations about student engagement during class work periods.

The assignments during this next unit will vary with individual projects as well as group projects. Written directions on Moodle and direct instruction will be balanced with plenty of class work time. There will be plenty of collaboration as students survey one another about their PowerPoint topics and produce authentic documents.

I will need to check for understanding with some students who still continue to struggle with writing formulas in Excel. Students will use their survey data to incorporate graphs into their PowerPoint projects. I also need to assess the student's knowledge of Word. I hope to schedule individual conference again since I found them so valuable during the last cycle and the students reported that they would like more feedback about their progress.

Finally, we will celebrate our technology learning with a fun "Choose your own Techventure" project and I will observe students teaching one another.