

Reflections on Constructivist Student Teaching in Business Education

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[Editor's Note: This article is a sample reflective journal entry written by a student teacher in the midst of his practicum. The article contains five “thought questions” about his efforts to incorporate constructivist practices into student teaching. While the student teacher’s practicum is now completed (successfully!), the article provides an example of a student teacher’s reflective thought processes during student teaching, and it also provides readers with a model for encouraging reflective thinking about student teaching. Readers are encouraged to send responses to the questions published in this provocative article. A summary of readers’ responses will be published in a subsequent issue of *JPACTe* as a way of generating dialogue about student teachers’ meta-cognitive processes. Short responses may be sent by clicking on “Feedback” on this website, and lengthier responses may be emailed to the editor at ishuman@stlawu.edu.]

Abstract

The reflections of a student teacher are presented around five “thought questions” that arise from his efforts to apply cooperative learning from a constructivist perspective in a Business Studies Computer Technology course: How might a student teacher further explore cooperative learning in this environment and best mix these diverse students? How can I get students to hear and understand this rationale? How can a new teacher without support hope to do so in the future without affecting the present level of learning? And how can a teacher take “dry” content and make it into interesting challenges? The article includes a sample lesson used to engage students in the development of a Fax coversheet. The author concludes with a request for feedback from the readership of *JPACTe*.

INTRODUCTION

Dear Educational Community:

I am a student in Niagara University’s College of Education. Here is what I am faced with as a new student teacher entering the classroom. I am teaching Business 130 which is the Microsoft Office User Specialist program that makes every effort to certify

computer users in the application of Word, Excel, PowerPoint and Access. The current strand of business study being taught is Microsoft Word. I am trying to understand how to make use of collaborative constructivism in this environment effectively.

There are twenty-four computers in the classroom. Class enrollment is at capacity. The class is multiculturally diverse, the largest percentage of students being of African American and Italian American descent. The student group has equal gender participation and each class has at least four students with IEPs and special needs. The student academic abilities range across the spectrum from Grade Three literacy levels to those one would expect in a senior student preparing for entrance into a College or University. Typing skills (keyboarding dexterity) vary with students who come from less privileged backgrounds limited by single finger and in many cases single hand technique unlike those students that have household personal computers. Thus, I face some serious challenges that I ask you to consider and I seek your advice for now and the future.

The computer class is one that really pairs student with the computer and the exploration of the possibilities and applications of a software program and the real world. Therefore it does provide the usual opportunities to apply cooperative learning from a constructivist perspective particularly when faced with time constraints and the breadth of material that needs to be covered to meet Microsoft certification standards. I have included my lesson plan, which provided students with a web quest as well as the attachment for the aforementioned. Here are my thoughts about this situation:

Thought Question #1: I am using pairs frequently and always suggest collaborative sharing. How might a student teacher further explore cooperative learning in this environment?

Thought Question #2: I am in the process of reseating the room in efforts to encourage greater learning (classroom management) and placing students in proximity to various levels of skill to encourage leverage of those abilities and scaffolding of prior knowledge. That being said each class consists of students ranging from grade nine to twelve (mixed). How can I best mix these diverse students?

Thought Question #3: It appears that Business may be a dumping ground for special needs students with various behavioral issues that further impact on the learning atmosphere. Some of these students are unable to read at high school level and so forth...therefore we also bring in literacy issues. In all cases of ability I stress to them that technology skills are a must in the coming job market and they cannot escape the need to be fluent on that platform. How can I get students to hear and understand this rationale?

Thought Question #4: I am presently paired with an experienced teacher who does a marvelous job in managing the demands of the classroom. She and I cooperatively collaborate to make sure each student is on task and assistance is provided to stimulate

learning. I wonder how a new teacher without support can hope to do so in the future without affecting the present level of learning negatively?

Thought Question #5: A good class in which both the student and teacher are pleased with the use of active learning may be more difficult to attain than I initially believed possible. The reality I discovered in my first placement is that there is a breadth of material that needs to be covered to prepare the students for the prospect of successfully completing the certification examination. At times the material being examined is so dull that it becomes exceedingly difficult to engage participants in meaningful dialogue and powerful lesson creation. As [Niagara University's] Dr. Vermette mentioned to me in a conversation a few weeks ago paraphrasing a concept from Rudolf Dreikurs, the consequences of not understanding is that you cannot learn if you're not there and thinking.

AN EXAMPLE OF MY STUDENT TEACHING

I would like to show you how I have experimented with ideas that could motivate my students. I have included a sample lesson attachment that I used to engage students as I introduced "Fax coversheet development."

NAME: Andrejs Rosts _____ **DATE:** _____

SUBJECT: Business 130 (MOS Class) **TIME ESTIMATE:** 48 minutes **GRADE:** 9-12

LESSON TITLE: Fax Business History (Web-Quest) and creating faxes using the Wizard Office Assistant tool.

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INTENDED STUDENT OUTCOMES

By the end of the class the student will be able to answer historical questions on fax technology development and be able to create a cover sheet for facsimile transmissions with the Microsoft Office User Specialist software.

RATIONALE (linked to student relevance)

The material covered provides practical application to the business world and interactive communication technologies that the student will be expected to perform in the workplace.

The Web-Quest further refines critical thinking and written skills while using Internet Explorer and Word software in the preparation of documents.

ACCOMODATIONS/MODIFICATIONS

The modifications and accommodations are made in accordance with Individual Education Plans as outlined for the special needs of participants in the course.

MATERIAL/EQUIPMENT/TECHNOLOGY

- **Materials** (Handouts)- Web-Quest Assignment; Business 130 – (MOS Practice Exercise); Solution set handout plus additional writing materials
- Computer and Internet access

MOTIVATION/ANTICIPATORY SET

- Students are engaged in discussion with “When do you think or believe fax machines were invented?”
- Show of hands - Do you believe it was within the last 5 years? 10, 20, 50, 100, 150, 162 years?
- Launch of Web-Quest and constructivist/co-operative learning as appropriate.

PROCEDURE

- Quick review of previous day’s material on fax or facsimile machines and document creation
- Teacher engages student attention with Anticipatory set
- Introduces the Web-Quest Assignment Handout
- Circulates the room to ensure students remain on task and engaged
- Collects student work when completed and then introduces
- Business 130 (MOS Practice Exercise) 3 Fax Templates - see handout for details
- Work the room with planned and spontaneous interventions
- Students to save work as BUS130 Fax Exercise

ASSESSMENT/EVALUATION

Formal Assessment - collection of Web Quest handout

Informal Assessment – Observations made on student engagement and task performance as a young professional

REFLECTION: TBO

INTERVENTION: Planned intervention - Why is there a need for different coversheets for fax machine transmissions?

Why would you CC someone with a fax transmission?

Some of the templates did not include return telephone and fax numbers. Why? If you were receiving an incomplete transmission how would you feel?

Spontaneous intervention: Web-Quest and EBay questions

This lesson is dependent on the individual students' abilities and may require additional time to be completed by next class.

MY REFLECTION ON TEACHING THAT LESSON PLAN

I found that the lesson plan went very well. The students' prior knowledge was leveraged and built upon. The result was that material introduced in the previous class was constructively reinforced with additional practical application via the Web Quest and the Fax Coversheet Design exercises (see appendix). I observed meaningful learning with the students as they began to comprehend the importance of accuracy of input and legibility of the documentation that can be directly applied to the working world and the future and present career paths of the respective students. The Web Quest provided historical constructivist/exploratory learning while the fax design wizard encouraged critical thinking skills. The lesson plan was designed so that diverse learners could work and progress at their own pace with sufficient opportunities for spontaneous intervention and planned interventions.

In terms of the parts of the lesson that I feel demonstrated evidence of development of professional goals, I like the lesson design and how it unfolded to meet the scaffolding opportunities on student's prior learning. In reflection, I note that for gifted students I

may have to generate more challenging additional scenarios to maintain focus on the learning experience. That said, it will be with this intention that I will continue to develop further in preparing future lessons and stimulating the diverse groups of learners spanning grades 9 through 12.

CONCLUSION: A REQUEST FOR FEEDBACK

As a way of concluding, I encourage feedback to the thought questions I have generated during my student teaching. I anxiously await any advice you may have that would help me (1) resolve these issues and (2) enhance my further professional development and (3) deepen my understanding of professional practice. Strategies that you can offer will certainly place me on firmer terrain and greatly assist me in making the transition from novice to accomplished professional teacher? How can a teacher take “dry” content and make it into interesting challenges?

Appendix

Web Quest Assignment:

Students will work alone or in groups of two if there are not enough computers available to provide individual computer access in class.

They will visit the following websites by typing the following destination on Internet explorer.

Students will then answer the questions in the space provided.

http://www.hffax.de/html/hauptteil_faxhistory.htm (Renson, 1999)

If you are unable to gain access to this site please access: www.hffax.de

Then select the history button and begin your quest for the answers to the following two questions?

Q: When was the Fax method of encoding data created and by whom?

Q: What is the (fax) or Facsimile method of encoding data?

Visit the following website:

<http://home.howstuffworks.com/fax-machine.htm> (Brain, n. d.)

Q: There are five common ways to print the fax, depending on the type of machine that receives it. **List the five ways to print the fax, depending on the type of machine that receives it.**

- 1.
- 2.
- 3.
- 4.
- 5.

Q: Go to www.ebay.com

Search "fax machines"

Locate the most inexpensive fax machine available. Copy down the price and the model number and any other reference that might help identify it.

Locate the most expensive fax machine available. Copy down the price and the model number and any other reference that might help identify it.

Your boss advises you that the budget has been approved to purchase a fax machine for your home office. There is one condition and that you have to support your decision to buy either the most expensive or inexpensive model with a three to five line written paragraph of why you feel this decision is the most appropriate. Write down your response on the following lines:

Answers:

Q: When was the Fax method of encoding data created and by whom?

1843, 33 years before telephone and Morse (CW) was used, Alexander Bain introduced his "**Bain's Telegraph.**"

Scottish physicist Alexander Bain develops and patents the first primitive facsimile machine.

The "recording telegraph's" sending device uses a stylus attached to a pendulum, which passes over metal type to sense light or dark spots on the metal plated "document" being sent. A pendulum on the receiving device makes a stain on chemically treated paper when an electric charge, which signifies a "dark" spot, is sent down a telegraph line

Q: What is the (fax) or Facsimile method of encoding data?

Facsimile (Fax) a method of encoding data, transmitting it over the telephone lines or radio broadcast, and receiving hard (text) copy, line drawings, or photographs.

A fax machine scans an image, whether it is text or a photo, by reading a very small area of the image at a time. The fax machine decides whether the area it is reading is light or dark and assigns the area a number such as "0" for white and "1" for dark. Then the fax transmits the number to a remote facsimile receiver (usually via telephone lines). The receiver makes a mark on paper corresponding to the area on the original image.

This process continues as the transmitting machine scans a series of small areas horizontally across the image, and transmits that information to the remote receiver. The transmitting fax then scans the next lower line and so on until the entire image has been scanned, digitized, and transmitted.

Q: There are five common ways to print the fax, depending on the type of machine that receives it. List the five ways to print the fax, depending on the type of machine that receives it.

Receiving the Fax

The bits for the scanned document travel through the phone line and arrive at a receiving fax machine. The bits are **decoded, uncompressed** and **reassembled** into the scanned lines of the original document. There are five common ways to print the fax, depending on the type of machine that receives it:

Thermal paper. When fax machines started infiltrating offices en masse in the 1980s, most of them used thermal paper. The paper is coated with chemicals that react to heat by turning black. Thermal paper has several big advantages:

- It is very inexpensive to build a thermal printer.

- Thermal printers have no moving parts except for the paper-feed mechanism.
- There are no expendables like ink or ribbons because the paper contains the ink.
- Thermal printers are nearly indestructible.

The only disadvantage is that the paper discolors over time, and it turns completely black if you leave it in a hot car.

- **Thermal film** - Thermal film uses a page-width ribbon that contains ink that melts onto paper when heated. This is more complicated mechanically than thermal paper but less complicated than an inkjet.
- **Inkjet** - This technique uses the same mechanism as an [inkjet printer](#).
- **Laser printer** - This technique uses the same mechanism as a [laser printer](#).

Computer printer - The fax is actually received by a **fax modem** (a modem that understands the Group 3 data standards), stored on the computer's [hard disk](#) as a graphics file and then sent to the computer's usual printer.

Answers to Home Fax purchase:

1. I will be able to interact with the office and clients from home.
2. I will be much more productive as an employee.
3. I will be able to use the fax to transmit assignments to school when I am unable to deliver them in person.
4. The fax will provide a back up method to interact with clients and colleagues when I am experiencing difficulty with alternate communication technologies.
5. I have always wanted to have a fax machine, but I'm too frugal with my money to buy one.

REFERENCES CITED IN THE APPENDIX

Brain, Marshall. n. d. *How Fax Machines Work*. Retrieved on September 20, 2005 from How Stuff Works Web site at http://www.hffax.de/html/hauptteil_faxhistory.htm.

Renson, Marius. 1999. *Facsimile and SSTV History*. Retrieved Sept 20, 2005 from HF-Fax Web site at http://www.hffax.de/html/hauptteil_faxhistory.htm.