

Curriculum and Pedagogy for Academic-Occupational Integration in Community Colleges: Illustrations from an Instrumental Case Study - Part VIII: Classroom Techniques for Integrating Literacy Instruction

by Dolores Perin – July 29, 2002

An examination of the wide variety of activities used by community college instructors to contextualize reading and writing for occupational students.

One of the advantages of academic-occupational integration is that it provides an opportunity to teach reading and writing skills in the context of the workplace applications, permitting literacy skills and content knowledge to develop simultaneously. This approach, a form of contextualized instruction (Mikulecky, 1998) is distinctly different from traditional approaches which see literacy skills as a prerequisite to learning content (Sticht, 1995). The purpose of this segment is to provide descriptions of a variety of ways in which instructors in community colleges are contextualizing literacy instruction in occupational content. The instructional activities are discussed in Perin (2000a).

An important issue emerging from this work is that although a wide variety of activities were used to contextualize reading and writing for occupational students, there was very little explicit instruction, which, it can be argued, would be beneficial in light of the colleges' reports of student literacy weaknesses (See Parts I and IX of this series.). Background information on several sites mentioned below (Beta, Chi, and Kappa Community Colleges) but not described in the preceding Parts may be found in Perin (2000b).

Forty different content area literacy activities were identified in 18 classrooms in which academic and occupational instruction were integrated (Table 1). There were seven examples each of report-writing, written summarization and reading comprehension; 3 instances each of writing lists and journal entries; 2 examples each of writing profiles, minutes, office memos, answers to questions, and charts; and single examples of writing e-mail and "specs," and peer revision. The most frequent activity by far was writing, with 25 (63%) different activities, found in the large majority of classrooms. Contextualization of literacy instruction was found across credential types (diploma, certificate and degree programs) as well as course levels (introductory and advanced). Contextualized literacy activities were found both in courses that transferred to the baccalaureate degree as well as non-transfer level courses.

CONTEXTUALIZED WRITING

REPORT-WRITING

Mechanical technology students prepare to write a report (example 1). The report must contain a description of a given material, its origin or source, its chemical composition, how the material is made, its uses in industry, advantages and disadvantages of using it, its environmental impact, cost, information about suppliers, and the future of the material. Research sources and an outline of an oral presentation based on the report are also required. Students prepare to write the report in their linked English class, where they learn how to locate information in reference books, magazines and newspaper articles; cite references; and avoid plagiarism by giving credit to sources. A large part of several English class periods is spent in the college library gathering information for the report according to guidelines provided by the English instructor.

Examples 2 and 3 were found in writing-across-the-curriculum (McGrath & Spear, 1991) classrooms in electrical engineering and radiologic technology, where students are required to submit a variety of formal reports. For example, in an assignment on fiber optics for an electronic devices course, students are asked to discuss the physical characteristics of the medium, principles of transmission, and to compare it with copper cables. The assignment also asks for a discussion of applications, including who in the local community is using fiber, and who makes the fiber cables and their components. Students are instructed to include diagrams, and to pay attention to grammar, spelling and sentence construction.

An assignment for a formal report to be written by the radiologic technology students (example 3) states that poorly written reports will not be accepted, and in this case students would need to seek help from the college learning center before resubmitting their work. Lab reports are also required in this class (example 7). Students submit two typewritten pages in a format that includes purpose, introduction, objectives, equipment, procedure, observations and conclusions. A sample lab report is posted on a bulletin board to aid students in preparation of the assignments.

Dental assisting students write job-related reports in a linked English class (Example 4). They are asked to interview dental assistants to find out to which professional organizations they belong, and how they continue to grow professionally while they are working. They are to write a report in memo format for their dental assisting instructor. A written assignment reminds students to use effective document design, highlighting and headings, and to follow a three-part structure when preparing the report.

In an English class, electrical-electronics students write a report that is dually required for an electronics class (example 5). The

report describes a major electronics project and is graded for content by the electronics teacher and for grammar by the English teacher. Attending the same English class are students from programs in business, air conditioning, drafting and design, computer networking, and machine technology. The instructor assigns cross-disciplinary projects, for example where computer and business students work together to design a business and report on it in a power point presentation. In a single-discipline project, electronics students work together to create a job manual.

In example 6, students in an accounting class are frequently required to write reports of several sentences describing their jobs, the history of the companies they work for, and accounting practices. For example, they are asked to call an area business and ask how it is owned (proprietorship, corporation or partnership). Sometimes they use the internet to obtain information. The students are asked to give reasons for events and practices, and to explain implications for business decisions. In class, they copy these reports on the blackboard as the basis of discussion. Unless asked, the instructor does not correct the students' writing, nor does she teach writing skills directly.

WRITTEN SUMMARIZATION

Students in the radiologic technology class summarize several self-selected articles from professional journals (example 8). The instructor's guidelines specify that the summary should be one typewritten page long and that articles must relate to current technological advancements in radiologic imaging pertinent to course content.

Summarization is also required of automotive service technology students (example 9), who are asked to summarize a section from course text on thermostat inspection and test procedure. In contrast to the radiologic technology assignment above, the automotive assignment is highly specific: "In your own words, write a one-paragraph summary of the information found in this section. Your summary should only contain information that a technician needs to accurately and safely inspect a thermostat." The assignment continues with suggestions for how the reading (example 35) and writing should be done.

"Read the entire section once, just to get a general feel for the information. Read the section again, slowly and carefully. As you read, use your highlighter to mark what you think is the most important information. Next, take the sentences that you have underlined and write them in a single paragraph. Check the length of your paragraph. It should be four to five sentences long. An effective summary is usually about 20-25% of the original text. If your paragraph draft is too long or too short, add or delete information as needed. Finally, rewrite or type your paragraph. Make sure that the summary is clear and that you use transitional words so one sentence leads to the next. Read through the paragraph one last time to check for errors."

The automotive service students also summarize information in the form of repair orders (example 10). This is done while role-playing in a lab with real cars and repair equipment. The class is team-taught by the automotive and English instructors. First, the "team leader" (automotive instructor), wearing an automotive service uniform, speaks to the students about content and format of service repair orders. He states that the report should be legible and clear. The students are told, "Don't try to diagnose. Just relay what the customer has said." The English teacher then takes over, lecturing briefly on how the repair order summarizes the information provided by the customer, and describing the various parts of a standard repair order form. The role play then takes place, during which the students write the repair orders while interacting with the "customers," who sit in the cars in the lab.

In a more academic summarization task, automotive students in an English class at another college are asked to summarize the history of the assembly line (example 11). In an office technology class (example 12), students are asked to select a course topic and present it to the class, and word process a summary of five important points they will make in the presentation.

In a physical therapy assistant class (example 13), the students write brief reports describing patients in their clinical rotations using similar information to that presented in chart form. Finally, nursing students in a linked English class are asked to describe a hospital visit they have made recently (example 14). The students read their descriptions aloud while the others evaluate it using a form provided by the teacher, which they hand to the writer. In an ensuing discussion, students ask questions of the writer (e.g., "Do you still want a career in nursing now that you've visited this hospital?"). During the discussion, the teacher guides a discussion of the quality of the writing, and the other students make suggestions for revisions. Peer editing is also found in example 33, where the accounting students follow formal guidelines provided by the instructor to make suggestions for revision of essays written about accounting practices. During this activity, the students work independently, applying the editing guidelines to the work of another student.

PROFILES

In an English class, dental assisting students write two kinds of profiles, one based on a job (example 15) and one based on a patient (example 16). The job profile focuses on an assistant in a pediatric, orthodontic, periodontic or other kind of dental office, and includes information on interpersonal, data collection, writing, technical and related skills that the dental assistant is expected to possess. The patient profile is based on a patient encountered in the student's clinical rotation, and contains information on the patient's history, current need, and treatment. This profile is written in memo format and is submitted to the students' dental instructor.

MINUTES

Two examples of writing minutes were identified. In the office technology class, the students were asked to obtain permission to take minutes at meetings held in the companies at which they were employed (example 17). The minutes are then word processed in the office technology class. In a mechanical engineering class, students are asked to conduct a "walk through" of a construction site and write minutes reporting on their observations (example 18).

LISTS

Three activities requiring the creation of lists were found. During a lecture on pregnancy and childbirth (example 19), a nursing instructor asks the students to list 3-4 interventions for fetal bleeding, and "put a star next to the priority." In the mechanical technology class (example 20), an assignment requires that students list the properties and other information about a metal snap switch blade with a welded electrical contact. Besides properties of the object, the list includes possible materials, options, a proposed solution, and why the solution was selected. In another example, the dental assisting students are required to work in small groups and create a list of questions that will be asked in a mock job interview (example 21).

CHARTS

In the office technology class, students interview 3 people at the company at which they work who do some sort of presentation, such as giving instructions or leading a meeting. Following the interview, the students create a chart (example 22), to be used to practice word processing skills, in which they name the company, the type of presentation, how the person prepares, if the person has stage fright, how this is overcome, and training the interviewee has received in presentation skills. The focus on presentation skills reflects the formal linking of the course with a speech class. Charts are also created by physical therapy assistant students in example 23. Here, they fill in information on a standard form used in clinical settings where they work as part of the program. The categories of information are similar to those required in example 13 above but phrases rather than sentences are used in the chart format.

MEMORANDA

The dental and engineering students in examples 24 and 25 are asked to write memos to coworkers in their respective fields. In one assignment, the dental students write to one of the other dental assistants in the office. The writer is to make a presentation at the preschool attended by the other worker's son and the memo states that the purposes of the presentation are to acquaint the children with the dental visit process and allay any fears they may have. The memo also provides details such as the time, day, date of the visit. The mechanical engineering students write a memo to an engineering office describing the results of a site-survey. The instructor, who is herself an engineer, teaches them how to "write as an engineer," using appropriate terminology and phraseology. A related literacy activity connected with this task is to write the "specs" for an engineering job (example 32).

WRITING ANSWERS TO QUESTIONS

Another form of contextualized literacy is seen in the task of writing answers to questions (examples 26 and 27). In the accounting class, students play roles in an assembly line simulation, in order to discover how workers and tasks affect each other, how problems arise in an assembly line, what happens when parts are defective, and to learn concepts of value added, and overhead and direct costs. Following the simulation, the students are asked to write answers several questions about the activity, which are read aloud and discussed in a subsequent class.

In the allied health class, students read sections of a textbook describing medical practices, and routinely write answers to the following questions: What was the author talking about? Extend the ideas related to what the author is writing. Answers are frequently discussed in class. The teacher's purpose is to help the students comprehend the material as well as form opinions of information.

JOURNAL WRITING

Three examples of journal writing were identified. Accounting students keep double entry journals based on text they are required to read (example 28). On one side of a page they record "Facts" from the text, and on the other side "Notes," reflecting their reactions. In the middle of the two sections is room for "connections" and "questions." Office technology students apply skills they learned in a previous course on customer service to write a journal entry describing an experience with an angry customer, and state how they might have handled it differently (example 29). This task combines the simulation of a workplace log entry with a training task in which learners reflect on workplace events in order to improve performance. In example 30, the dental assisting students write a journal entry after each day of their clinical rotation. The entry includes the dentist's name, arrival and departure times, duties, positive and negative experiences, personal and professional strengths used, and areas that need improvement.

ELECTRONIC MAIL

In example 31, the dental assisting students are asked by their English instructor to send an e-mail message to the dental instructor stating that they will be teaching a certain technique to beginning dental students. They are to ask the instructor for suggestions for the training, and for permission to borrow certain equipment. The purpose of this activity is to use writing skills that will be used in dental assisting jobs. Since experienced dental assistants participate in training new employees as part of their job responsibilities, the electronic-mail writing activity was an authentic task.

CONTEXTUALIZED READING COMPREHENSION

Seven different reading comprehension activities were encountered in the study. In a library assignment, students in a business course (example 34) consult a microfilm copy of a given newspaper for the day they were born and answer questions about the main headline, an important business event and the exchange rate of the two currencies reported on that day. They consult the Statistical Abstract of the United States and answer a question about the importance of this reference for business students. They also select an article from a financial newspaper or magazine, and prepare a five-minute oral presentation on it.

Besides the provision of guidelines for reading in example 35 above (see section on summarization), the automotive students check

their literal comprehension of repair procedures (example 36). After reading a section in the manual on bearing clearance, they answer questions such as "Which of the two methods of measuring bearing clearance is more desirable according to the information?" "What procedure must be followed to prevent cylinder block or main bearing cap damage?"

In example 37, a nursing class uses a bestselling trade book "The Hot Zone," which describes a medical emergency, to teach medical ethics. (The same book is also being used for other purposes in linked English and philosophy classes.) The nursing instructor checks comprehension and stimulates classroom discussion through verbal questioning, e.g. "Do animals and humans have the same rights?" "When the doctor did not let on that he had been infected, what principle do we see?" In another comprehension activity, the students divide into small groups and compare and contrast ethical principles of the American Association of Nursing with those contained in a patients' bill of rights, presented in the course text. The activity requires making connections between specific elements of the two documents.

In example 38, the nursing students work in groups to create "concept maps" on index cards, and present their ideas to the class. A concept map of nursing history includes levels of the profession, sites of education, degrees, and references to research on nursing. A company mission statement is the text used for the reading comprehension in example 39. Here, the office technology students analyze the statement to discover whether it pertains to customer concerns. Finally, in example 40, the mechanical engineering instructor provides guidelines for reading the course text, which is very dense. A major strategy is to reread assigned text several times. One of the course assignments is to select two pages from the text book and make a presentation in which the information is expressed in the student's own words. The students also write a page of instructions explaining how to perform an application described in the text, such as applying information about intersecting planes in an engineering task.

Table 1. Contextualized literacy activities used in integrated classrooms

Example #, college, subject	Literacy Activity
1.Sigma, Mechanical Tech.	Write research report
2.Omega, Electr. Engineering	
3.Omega , Radiologic Tech.	
4.Beta, English	
5.Chi , English	
6.Beta, Accounting	Write brief descriptive report
7.Omega, Radiologic Tech.	Write lab report
8.Omega, Radiologic Tech.	Summarize article from professional journal
9.Epsilon, Auto. Serv. Tech.	Summarize section of automotive text
10.Epsilon, Auto. Serv. Tech.	Summarize information in repair order
11.Rho, English	Summarize history of assembly line
12.Sigma, Office Tech.	Summarize key points for presentation on word processing
13.Gamma, Resp. Ther. Asst.	Summarize patient information
14.Epsilon, English	Summarize hospital visit
15.Beta, English	Write job profile
16.Beta, English	Write patient profile
17.Sigma, Office Technology	Write minutes of business meeting
18.Kappa, Mech. Engineering	Write minutes of engineering site survey
19.Gamma, Nursing	List nursing interventions
20.Sigma, Mechanical Tech.	List properties & materials of industrial tool
21.Beta, English	List interview questions
22.Sigma, Office Technology	Create chart based on company interview
23.Gamma, Phys.Ther. Asst.	Fill in patient chart for physical therapy patient
24.Beta, English	Write office memos
25.Kappa, Mech. Engineering	Write answers to questions
26.Gamma, Accounting	
27.Lambda, Allied Health	Write double entry journal based on text
28.Gamma, Accounting	
29.Sigma, Office Technology	Write journal entry on customer service, dental practice
30.Beta, English	Write e-mail message describing training
31.Beta, English	
32.Kappa, Mech. Engineering	Write specs for engineering job
33.Gamma, Accounting	Peer editing of accounting report
34.Gamma, Business	Rdg comp: obtain financial information in library
35.Epsilon, Auto. Serv. Tech.	Rdg comp: guidelines for reading automotive text

36. Epsilon, Auto. Serv. Tech.	Rdg comp: find information in service manual
37. Epsilon, Nursing	Rdg comp: answer questions about health txt
38. Epsilon, Nursing	Rdg comp: concept map for nursing text
39. Sigma, Office Technology	Rdg comp: analyze company mission statement
40. Kappa, Mech. Engineering	Rdg comp: present on material from engineering textbook

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