Curriculum for a course in word/information processing

Patricia A. Revelles

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California State University
San Bernardino

CURRICULUM FOR A COURSE IN
WORD/INFORMATION PROCESSING

A Project Submitted to
The Faculty of the School of Education
In Partial Fulfillment of the Requirements of the Degree
of
Master of Arts
Education: Vocational Option

by
Patricia A. Revelles, M. A.
San Bernardino, California
June 1990
CURRICULUM FOR A COURSE IN
Word/Information Processing
by
Patricia A. Revelles
June, 1990

Approved by:

Advisor, Dr. Joseph English
Second Reader, Dr. Ronald Pendleton
CURRICULUM FOR A COURSE IN
Word/Information Processing

(Abstract)

Patricia A. Revelles

Statement of the Problem

Many students have taken traditional word processing courses. Often they are enthused about learning the program applications, but are "bogged down" with learning the commands. The frustration can sometimes overwhelm even the best student. In order to prepare students for the "practical" applications of the business world, the need to develop transferable skills became evident. This project represents the development of an integrated curriculum plan, emphasizing the application of word processing, spreadsheets and database programs. These skills will not only assist students in the workplace, they can also enhance their personal growth.

Procedure

WORD/INFORMATION PROCESSING was designed to complement the current vocational course offerings of the business education curriculum at the secondary level.
In order to minimize the cost, computer hardware and software currently in use in the class would be used. The main theme of the course was transferable skill development on an integrated program.

Description of the Curriculum Plan

The curriculum consists of a course description, course goals and objectives, course outline, lesson plan/design and equipment and resources.
ACKNOWLEDGEMENTS

I would like to thank the following individuals for their untiring patience: Dr. Joseph English, Professor and Coordinator of Graduate Studies in Vocational Education, and Dr. Ronald Pendleton, Professor and Coordinator Vocational Teacher Education.

Last, but not least, I want to thank my family for their love, support and encouragement, in fulfilling this commitment.
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INTRODUCTION

Statement of the Problem

The Objective

The purpose of the project is to develop a curriculum for a Word/Information Processing class for secondary vocational students enrolled in a business education program.

Context of the Problem

Providing information quickly is becoming increasingly important to business operations. Businesses need current data for internal control in order to stay competitive. Short- and long-range decisions which ensures the long-term success of a business operation are based on incoming information (James, 1987). Because sound business decisions depend on the flow of accurate and timely information, word processing systems—with their remarkable speed and accuracy—have become essential to information management (Griffith, 1989).

Since true voice-recognition technology at affordable cost remains in the distant future, so the alphanumeric keyboard will continue to be the principle device by means of which information is generated, retrieved and communicated.

Word processing, network access, and electronic mail require the use of the keyboard. In order to master the Information Age, all students need to learn touch-typing (White, 1987).
Touch-typing is a traditional course offering. Nonetheless, changes must be made in the traditional business education curriculum. In some cases, a teacher may not find desired instructional materials from commercial sources and therefore must develop curricular materials on their own (French & Crunkilton, 1989). A variety of methods, according to (Purcel, 1987), may be used to deliver the content including demonstrations, practice, on the job instruction, computer-assisted instruction, simulations, reading, cooperative learning and lectures.

Teaching students needs to be highly individualized. A well-trained, professional teacher is in the best position to select what a specific student needs to learn next. A logical curriculum is then in evidence (Edinger, 1987).

A great deal has changed in business education during the last twenty years. The formula for successful data education programs remains the same. That formula includes quality text materials, presented in an interesting and business-like format, and in awareness of changes in the business and educational environment (Muscat, 1989).

In 1985, half of America's working population had jobs in offices. Researchers predict that by 1990, 65 percent of the workforce will occupy positions in offices, and by the turn of the century, this total will reach 90 percent. The Information Age that futurists predicted has arrived and it
will require a new generation of office support personnel who are proficient in time management, information management, and human relations skills. Office workers are no longer clerks who type and answer the telephone. They are considered part of the management team (Burkhalter, Scerba & Denton, 1986).

Problem Statement

The problem was that too often students look upon word processing programs as "just typing." Often, many students are only concerned with learning the mechanics of a software program, without a concerted effort to productivity, applications or relationship to the total business picture.

Purpose of the Project

The purpose of the project is to design a Word/Information Processing curriculum for secondary students enrolled in a business education course.

This course will include: Word/Information Processing Applications and Office Procedures which will meet different needs and complement each other in the business education curriculum.
Definitions

Word/Information Processing - The transformation of data into useful information.

Office Procedures - A series of steps followed by an office worker in a regular, defined order.

Curriculum - The learning outcomes of instruction.

Assumptions

It was assumed that:

1) Students with word processing skills need practical applications in many areas.

2) Students have not focused on the total picture of the Information Age and its implication in the automated office environment.
Delimitations

The Word/Information Processing class was designed for instruction on the Epson Equity 2+ personal computer, with a hard drive utilizing Word Perfect 5.0 software.

Limitations

This project was limited by the expense that would have been necessary to preview numerous software programs and equipment for adoption into the proposed curriculum.

Significance of the Project

The traditional typewriting and word processing courses have not met the needs of many vocational students enrolled in a business education class. This project was designed as a means of integrating various courses into the curriculum. It was also designed to enhance the skills required to succeed in today’s office. Yesterday’s office separated the technologies; Today we are attempting to integrate the technologies.

Educators who train office workers must decide how to integrate the computer so they can effectively teach word processing, electronic filing, database and spreadsheet applications.
Summary

This introductory section identified the problem that was addressed and the proposed solution through curriculum development.

Organization of the Remainder of the Project

The remainder of the project included a review of the literature on Word/Information Processing Applications. The methodology that was used to complete the project, a conclusion, a comprehensive bibliography, and the curriculum for the proposed course. The curriculum was comprised of a course description, course outline, lesson plan and lesson design and equipment and resources.
REVIEW OF THE LITERATURE

Introduction

The review of the literature includes a background of the history of office automation: developments leading to the interest in office automation, the coming information age, the advances in technology, the concerns about the growing number of office workers and familiarity with computing equipment.

Literature Summary

Panko and Sprague (1982) see the history of office automation starting in the office of the past. In the early 1960's computers were staking a claim on data processing applications, replacing the older electronic accounting machines. Electric typewriters and photocopiers were commonplace. They further described four major specialization areas geared to manage increased spending toward office technology: data processing/management reporting, specialized office products, telecommunications, and general office products.

Schedules of large businesses had to be built around the times when the computer was available. As a result, this formerly scarce, costly resource became inexpensive enough that the personal computer became something more than a dream (Uhlig, Farber and Bair, 1979).
As managers within organizations become aware of the other technologies used in various departments, they realize a need to work toward some common goal. The goal was to make information and technology available to all groups within the organization that duplicated the activities of other departments. That goal can now be met by using the wide range of information processing technology, reorganizing procedures, and effectively using an organization's most important resource: people. (Bergerund/Gonzales, 1981).

The concern for cost effectiveness, new information technology and the increase in the amount of information in print showed how society became more "information intensive." According to Panko (1984) a recent U. S. Department of Labor statistics showed that white-collar work is divided into two categories: information workers and non-information workers.

Offices are moving toward maximum usage of computers so that the processing of information becomes almost totally electronic. In an electronic office, workers have access to more information than that which exists in their own computer files. If the office is modernized, or in the process of modernization, the information processing cycle will follow this pattern: input> process> storage> output> distribution/communication, IPSOD (Frueling, Weaver 1987).
Uhlig, et al, reports that computers have not been keeping up with the information explosion. The gap is largely composed of textual information. Most of the work that is conducted in business offices involves narrative information. The office of the future will have interactive computer tools capable of helping knowledge workers in the office handle the large volumes of narrative information in which they deal with on a daily basis.

Today, solid-state electronics and computing technology are merging voice, data, and images and are transmitting them in an integrated fashion from one remote part of the universe to another. As a result, power, and new capabilities are emerging (Mullins & West, 1984).

New technologies and new work environments in offices have caused the changes in the role of the office worker. Different skills and attitudes are required in the modern office than were required in the traditional office.

Personal computers increase productivity, no doubt, but many would disagree that anyone can use one. As with any other tool, its effectiveness depends upon the skill with which it is used. Using a computer requires first that one learn how. Almost anyone can learn to use a computer. Indeed, for many the act of learning is addictive. The more one uses a computer, it seems, the more one wants to (Brightman & Dimsdale, 1986).
The three most widely used business information processing applications are: word processing, data base management and spreadsheets. Most employees recognize that familiarity with computerized information processing is essential for success. People who use computers should be acquainted with the operating system, the application program and the software.

Word Processing Programs are widely used in the business world. Economics play an integral part of why it is used. To name a few, some of the areas in business that benefit highly from word processing are: legal, insurance companies, banks, newspapers, researchers and writers.

Businesses collect information. Their success depends upon how effectively they collect information for daily operations. Database management programs share information to facilitate the reports showing just what managers need. More and more businesses and office personnel are using data bases that met the specialized needs of those managers and executives.

Electronic worksheets (or spreadsheets) were first introduced in 1979, by Dan Bucklin, a graduate student at the Harvard Business School. He joined forces with a friend, Robert Frankston, a computer programmer, to prepare a computer program which would take care of the tedium of worksheet analysis. Their work resulted in a program called
Visicalc or "Visible Calculator". It was visible because the results of the computer's calculations appeared on a computer's video display screen as if it were a sheet of columnar paper. Hence, spreadsheets on a computer are used for many business applications, i.e., taxes, accounting, manufacturing, inventory, payroll, etc.

As part of the integrated electronic office, students should be prepared to become intelligent users of information, according to White (1989). Much of that information will come in imagery form, which leads to the second basic skill of the information as images themselves are not new in history, but their power on films, on tape, on television, on monitors, is a new power.

Profitable businesses that thrive on good information are infocentric: information is at the center of their profit making ability (Wasik, 1987). The students of today, can be the information specialists of tomorrow. Who then would be better prepared for these jobs than word processors, administrative assistants, or office clerks?

By specialized, intensive, information/word processing training in such areas as: the integrated office, business education students can be blessed instead of cursed with the tools of new technology. They can be prepared for electronic mail, fax machines, electronic monitoring,
specialized databases. Clearly, according to (Wasik, 1985) and most importantly, the information specialists should be comfortable with and trained in the use of a personal computer.

Myatt (1989) states that: "Entry-level office automation personnel may become qualified for compensatory work after completing high-school office curriculum or a two-year program at a post-secondary school. All areas of office automation need to be taught, including competencies in office automation, math, operations of office machines and management."

According to Brock (1987), about 90 percent of the new jobs through 1995 will be in the service-producing sector. The real problem is not a labor shortage, but a skill shortage, as many workforce entrants may not have adequate training for entry-level jobs. Brock (1987) states, "There will be a job for every qualified young person who wants one." The catch word is "qualified."

Applications software such as word processing, database, or spreadsheet programs provide an excellent example of why concepts and technical understanding need to be taught to all levels of office workers. To prepare business education students for an integrated office environment, the basic shorthand, typewriting and office procedures courses
will have to be transformed into courses that provide the 
prerequisite skills of office technology classes (Van Huss, 
1989).

Curriculum Defined

The curriculum is the sum total of the learning ex-
periences for which the school has responsibility.

Finch (1989), defined curriculum as "the sum of learn-
ing activities and experiences that a student has under the 
auspices or direction of the school. We must consider the 
curriculum as encompassing general (academic) education as 
well as vocational and technical education. The curriculum 
must include work and experience preparation for life and 
earning a living."

Gagne & Briggs (1974) suggested an objective format 
consisting of five components:

1. Action
2. Object
3. Situation
4. Tools and constraints
5. Capability to be learned

Whereas, Madaus & Stufflebean (1989) suggested that 
"Learners should be treated as active, purposeful human 
beings and given a role in controlling the learning situa-
tion".
According to Skinner (1968), the three essential parts of any set of contingencies of reinforcement: learning by doing, emphasizes the response; learning from experience, the occasion upon which the response occurs; and learning by trial-and-error, the consequences. But no one part can be studied by itself, and all three parts must be recognized in formulating any given instance of learning.

Robert M. Gagne's categories are a blending of behavioristic psychology and cognitive theory. In more detail his categories are:

- Response Learning
- Identification Learning
- Chains or sequences
- Association
- Concepts
- Principles
- Problem solving
- Strategies

The crucial first step in the Tyler rationale, on which all else hinges, is the statement of objectives. The objectives are to be drawn from three sources: studies of the learner, studies of society, and suggestions from subject matter specialists. One reason for the success of The Tyler rationale is its very rationality. It is an eminently reasonable framework for developing a curriculum; it duly
compromises between warring extremes and skirts the pitfalls to which the doctrinaire are subject.

In one sense, the Tyler rationale is imperishable. In some form, it will always stand as the model of curriculum development for those whose concern of the curriculum as a complex of machinery for transforming the crude raw material that children bring with them to school, into a finished and useful product. By definition, the production model of curriculum and instruction begins with a blueprint for how the student will turn out once we get through with him. Tyler's version of the model avoids the patent absurdity of, let us say, Mager's, by drawing that blueprint in broad outline, rather than in minute detail (Pinar, 1975).

To sum up, we have explored the necessity for developing objectives at several levels of generality and abstraction as appropriate for different stages in the process of course and instructional material development. We have explored several frameworks. Hence, there is not a uniform point of view among the thousands of curriculum books about what curriculum is or should be.
Summary

The review of the literature began with the history of office automation, from the past to the present. Expert opinions were given about the value of word/information processing, cost effectiveness and the electronic office. A definition of curriculum and curriculum objectives followed. The role of the office worker and the use of integrated programs on the microcomputer, will clearly prepare students to be information users.
METHODOLOGY

Introduction

This section will detail how the project was carried out. First, the development of course materials, course description, course goals and objectives, course outline will be discussed in the curriculum design section. Next, the student population that will be served by the course will be described. An estimate of the cost of developing the project will be given and the calendar of events will be outlined. The section will conclude with a summary.

Curriculum Design

Public demand for a more rigorous curriculum, combined with the transition to a service and information economy, the explosion of technological advances, and the major changes in the job market and society have created a national education reform movement. The reform movement has resulted in an increased concentration on the development of basic skills, and significant increases in high school graduation requirements.

The facets responsible for the reform movement and the changes being made in its implementation have some very important implications for the design and content of today’s high school business education program. The program must be more comprehensive. It must serve a more diverse student population. It must be technologically current, deliver and
reinforce the instruction of basic skills and seek out ways for business education to participate in the instruction of courses required for high school graduation. There must be better organization to effect economies in the delivery of the required instruction and the diminishing student elective hours.

Performance Indicators

Business education programs prepare students for occupations in which there is a verified job market demand. The content of the business education program has been assessed, and where necessary, modified to include industry-validated standards in Word/Information Processing. Computer instruction to develop and reinforce the skills and knowledge required for employment and for personal applications is provided throughout the business education program.

It was determined that the students would need to have prior knowledge of microcomputers, since this course was developed for instruction on a microcomputer. Teacher direction was centered around the usage of the Word Perfect 5.0 textbook.
The focus of the class was on transferable skill development, therefore it was determined that student success would be measured by the student's ability to transfer learned skills to practical applications.

Validation of the Criteria

The Business Education Advisory Committee, comprised of representatives from employers, labor, management, staff and appropriate ethnic minorities, was consulted in the design, development, operation and evaluation of the respective program. A review and analysis of literature to determine state-of-the-art thinking and to interpret the literature in terms of standards was made. Materials reviewed included: research reports, journal articles, curriculum guides, and educational and business journals. In order to prepare individuals to enter and advance in the labor market, their instruction must be based on current occupational needs as validated by the local advisory committee.

A course outline and course syllabus were included in the project in order to summarize the course content and requirements. A word processing prerequisite was assigned to the class, and open enrollment was established for all students (grades 9 - 12+) so that students would be able to develop their skills.
Summary

This integrated Word/Information Processing curriculum has been written with one purpose: to provide the simplest, most direct way of developing transferable word information processing competencies among high school and college-level students who have already become part of the word processing "world."

Upon completion of these exercises, the student will have gained entry-level employment skills for becoming a Word/Information Processor.

According to Van Huss (1989), Unless broad, transferable skills are taught, our graduates will be locked into low-level positions. Office technology classes must then integrate knowledge of information management, communications, major office systems and the specific preparation needed for professional, technical, secretarial and clerical occupations.

Word/Information Processing prepares students to function effectively in today's electronic office environment. Training with word processors, microcomputers, and other automated equipment assists students in learning new ways of completing traditional office tasks such as filing and retrieving information, computing and communicating with others. Due to the writer's resources, the cost of developing the curriculum was minimal. Diskettes, paper,
and printer ribbons cost approximately two hundred dollars. The course was designed for the Epson Equity 2+ personal computer. The Word Perfect software program was installed on the hard drive of the computer. Implementation of the course would be limited to the cost of textbooks and student work diskettes.

The events of the curriculum development project occurred in accordance with the timetable that was established below:

- **Nov-Dec 1989** Examine textbooks & software
- **Jan-Mar 1990** Wrote course objectives and curriculum
- **April 1990** Finalized curriculum
- **May 19 1990** Submit project for final approval

The methodology section consisted of a discussion of the course materials, advisory committee validation and curriculum outline. A description of the student population to be served was followed by a cost estimate and calendar of events.
REFERENCES
REFERENCES


CURRICULUM MATERIALS
The curriculum is in written form and includes the following components:

- Course description
- Course goals & performance objectives
- Course outline
- Lesson Plan and Lesson Design
- Equipment and Resources
Course Description

Course Title: Word/Information Processing
Grade Level: Grades 9 - 12+
Length of Course: One semester
Prerequisite: Basic Word Processing Skills
Type of Course: Elective, Vocational, Skill Development

Description:
Word/Information Processing is a one-semester course based upon current business concepts. This course will help students understand the role of office support personnel in business and how information is controlled and processed. This course can be taught as a traditional teacher directed course using textbooks and instructional units or simulations can be utilized. Emphasis is on integrated office functions and management of information in the business environment.

Goals:
Students will be trained to apply the principles of typical business applications in the automated office environment.

Objectives:
Students will gain an understanding of the concepts and applications of word/information processing. Students will learn to prepare and handle advanced word/information projects.
Methods of Instruction:
Combination of lecture, discussion, demonstration and assigned projects.

Methods of Evaluation:
Assignments, written tests and problem tests.
Level of testing used: Memory, interpretation and application.
Performance Objectives

Instructional Task:
Review of the Word Perfect Features

Student Performance Objective:
Given the Word Perfect software program, student will demonstrate the correct usage of the program's default settings, by using basic editing and function keys and keyboarding documents onto a computer disk, with 100% accuracy.

Instructional Task:
Advanced Word Perfect Document Techniques

Student Performance Objective:
Given the file merge function of the Word Perfect software program, student will generate documents and use the file merge function, by keyboarding primary and secondary files onto a computer disk, with 100% accuracy.

Instructional Task:
Key Data Into Spreadsheet

Student Performance Objective:
Given the math definition feature of the Word Perfect software program, student will create a spreadsheet using the spreadsheet math formula, by storing and printing the data onto a computer disk, with 100% accuracy.
Performance Objectives

Instructional Task:

Simulated Office Procedures

Student Performance Objective:

Given the job assignments of a simulated office, student will classify and prioritize the workload, by analyzing and manipulating the assigned tasks onto a computer, with 80% accuracy.

Instructional Task:

Filing and Records Management

Student Performance Objective:

Given the data to be categorized, student will classify, sort and file information by utilizing the sort function of the Word Perfect software program, with 100% accuracy.

Instructional Task:

Research and Analyzing Information

Student Performance Objective:

Given the required data, student will research and identify the data by demonstrating competency in the use of reference materials, with 80% accuracy.
Performance Objectives

Instructional Task:

Office Communications

Student Performance Objective:

Given the office communication data, student will demonstrate competency by transmitting documents using the electronic mail system, with 100% accuracy.

Instructional Task:

Personal Job Skills

Student Performance Objective:

Given goals and career plans, student will demonstrate communication skills by generating resumes and employment communications by storing them on the Word Perfect software program, with 100% accuracy.
Course Outline

I. Introduction to Word/Information Processing
   A) Terminology
   B) Concepts
   C) Software
      1. Basic Operation: text-editing
      2. Formatting

II. Document Production
   A) Letters and Memos
      1. Routine
      2. Merging
      3. Reports

III. Using a Spreadsheet
   A) Basic operation
   B) Integrated with database management

IV. Computerized office simulation
   A) Introduction and overview
   B) Employee handbooks
   C) Guided practice
V. Filing and Records Management
   A) Alphabetic
   B) Subject
   C) Numeric
   D) Chronological

VI. Researching and Analyzing Information
   A) Reference materials
      1. Reference manuals
      2. Dictionary
      3. Telephone Directory
      5. Thesaurus
      6. Almanac
      7. California highway map
      8. Airline Schedule
      9. Postage rate chart
     10. Catalogs

VII. Office Communications
   A) Telephone
      1) Techniques
      2) Conferencing
      3) Voice Mail

   B) Mail
      A) Incoming/Outgoing
      B) Electronic Mail
VII. Personal Job Skills

A. Goals and career planning
B. Communication skills
C. Documents for success
D. Interviewing
E. Using office tools
Lesson Plan and Lesson Design

Successful curriculum improvement and efficient use of sample course outlines will emerge in the classroom with students and teachers. Effective teaching strategies include lesson plan, with instructional units based on the following:

1. Select an objective
2. Give a presentation
3. Use input and modeling or demonstration
4. Check for understanding and feedback
5. Allow time for guided practice
6. Observe independent practice

An effective teaching five step lesson plan is recommended:

1. Mind set for lesson
2. Presentation including:
   a. Modeling
   b. Checking for understanding
3. Guided practice
4. Closure for the lesson
5. Independent practice
Equipment and Resources

The following is a list of required resources for the Word/Information Processing Course:

**Equipment:**
electronic typewriters
computers and printers
printing calculators

**Software:**
operating system
word processing
spreadsheet
database
filing simulation
communications
graphs

**Other:**
diskettes
reference manuals
dictionaries
telephone directories
thesaurus
almanacs
postage rate chart
Zip Code Directory
catalogs
secretarial handbooks
file folders
index cards
business magazines
newspapers

  Access to:
copier
three-hole punch
postage scale
staplers and staples
paper cutter
microfiche reader
library
telephone
videos

  Information about:
facsimile machine
telex

modem/telecommunication system/electronic mail
APPENDIXES
APPENDIX A
Dear Advisory Committee Member:

There will be a meeting of our Business Education Advisory Committee on Friday, April 20th at 3:30 p.m., in the Business Education Center at the Youth High School.

Please join us in order to plan our new Word/Information Processing curriculum for the upcoming year.

We need your continued input and support.

Sincerely,

Patricia A. Revelles
Business Education Teacher
APPENDIX B
BUSINESS EDUCATION ADVISORY COMMITTEE

A. M. Fuller
Consultant
Los Angeles City Schools

Mary P. Ramirez
Owner
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Ora Williams
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Loral Industries
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