

USING THE BUSINESS PLAN AND MICROSOFT OFFICE TEMPLATES TO TEACH COMPUTER SKILLS TO HIGH SCHOOL/HIGH TECH LEARNING DISABLED STUDENTS

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ABSTRACT

The Montana Center on Disabilities and the MSU-Billings College of Business (COB) collaborated with area high schools to provide computer instruction to learning disabled students. Using the business plan and MS Office templates, students received Word, PowerPoint, and Excel instruction. Pre/Post-test analysis of gain scores were significant ($p > .05$) for two of the instructional units.

Introduction

With the implementation of Individuals with Disabilities Education Act (IDEA) in 1994, Congress mandated educational reforms to provide equal opportunities to individuals with disabilities. The Montana High School/High Tech Project has provided local schools in the Billings and surrounding areas with an option to meet the requirements of the law, and the opportunity to enhance the lives of individuals with disabilities and enable them to have the same goals as their non-disabled peers. Montana High School/High Tech Project's mission is to develop an enrichment program for high school junior and senior students with disabilities. It is designed to develop career opportunities and provide exploration of post-secondary options for training in the field of computer technology. Implementation of instruction consists of lab-based activities, on-site experiences at businesses with computer technology positions, and mentoring by a computer technology professional. Activities include site visits, job shadowing, and summer internships (U.S. Department of Labor, 2001). The Montana High School/High Tech Project began on October 1, 2001 with funding through a grant from the Department of Labor. The project was developed jointly by Mike Hermanson, Director of the Montana Center on Disabilities, and Dr. Lorrie Steerey, Professor of the College of Business. The proposal focused on assisting students with disabilities to gain knowledge and experience that would provide them with the technology skills and background necessary for careers in Montana. The program was developed on the premise that there were few career opportunities in Montana that required advanced technological skills. However, because Montana businesses tend to be small and all employees are required to manage a variety of tasks, students desiring a professional career in Montana would need comprehensive computer skills. With this in mind, the activities of the Montana High School/High Tech program focused on providing a quality training program in computer skills and involving students in a variety of vocational experiences that would introduce them to the use of computers in numerous occupations. The College of Business developed a training program to cover the Microsoft Office software and The Montana Center on Disabilities provided guidance on accommodations for students with disabilities. The Montana Center also developed a set of activities to introduce students to businesses utilizing computer technology, adult disability support services, and information on pursuing post-secondary education.

During the 2001-2002 school year, the computer training was conducted on Saturday mornings. The curriculum format consisted of presenting the information and then practicing the skills through individual activities. Retention of the first year participants was very low. Following the first year of operation the decision was made to make two changes to the program in order to improve retention of participants and to increase their knowledge and skill acquisition. The first change was to move from a weekend format to an after school format. The second change was to use group activities for participants to practice computer skills. Also, a year-long activity was developed to guide the practice of skills. The activity was the development of a business plan and the 2002-2003 participants were divided into three groups at the beginning of the year. Each group worked on developing a business plan over the course of the year. The changes in procedures did increase retention of students in the process. The 2002-2003 Montana High School/High Tech program had thirteen participants. There were seven males and six females, and the types of disabilities represented by the 2002-2003 participants are shown below.

Specific Learning Disabilities	8
Mental Retardation	2
Autism	1
Other Health Impairments	1
Multiple Disabilities	1

Learning Objectives

The learning objectives for this program were to teach:

- Basic computer skills
- Familiarization with Microsoft Office Word, Excel, and PowerPoint
- Communication skills
- Team work
- Planning
- Career exploration

Teaching Schedule

The total time spent with MS Office hands-on learning in the computer laboratory was 26 hours. The distribution of classroom hours was:

- Internet Explorer and search engines 4 hours
- MS Word 8 hours
- MS PowerPoint 6 hours
- MS Excel 8 hours

The business plan was used as an overall teaching/learning device to provide continuity and realism to the instruction. The Small Business Administration website at: www.sba.gov provided excellent resources for course design and development. Additionally, PowerPoint business plan and marketing plan templates were used to guide and reinforce the students' learning. During the instruction, the primary instructor led the class through lecture, demonstration, and one-on-one assistance. Three additional support personnel from the Montana Center on Disabilities provided assistance by helping the students when needed.

Research Design

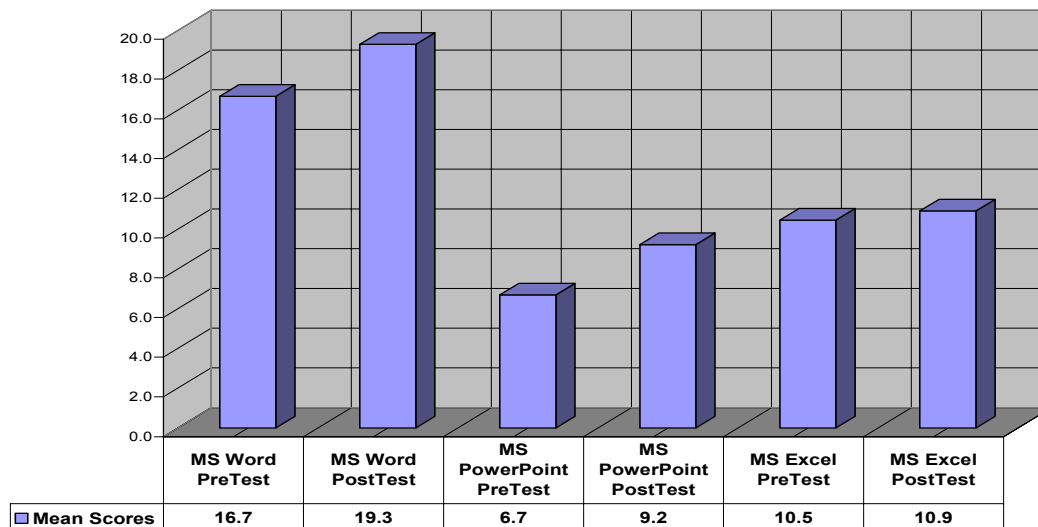
This study used a one-group Pretest/treatment/Posttest design. This can be graphically depicted as: O – X – O, with O = measurement of the desired variable (MS Word, PowerPoint, Excel knowledge) and X = treatment (26 hours of hands-on laboratory instruction). The null hypothesis stated that there will be no difference between students' MS Word, PowerPoint, and Excel pretest and posttest scores. A paired-samples T-test was selected to detect significant differences between the students' pretest and posttest scores. A two-tailed test of significance was set at $\leq .05$.

Pretest and Posttest administration

The Getting Things Done Pre-Assessment High School Age Range test was administered to thirteen High School/High Tech program students on October 23, 2002. The instrument tested students on Basic tools, Word Processing, Presentation software, database, and spreadsheet knowledge. Students were tested in a one-on-one environment and required to demonstrate their proficiency in each area. Additional interview questions rated students' knowledge in Multimedia tools such as: image editing, digital camera, video camera, audio tools, and video tools. Also rated were Communication tools, Research & Problem Solving, and Computer Maintenance. Only the Basic Computer skills pre-assessment and post-assessment student scores were used in this study to evaluate learning. The posttest was administered in a similar manner on May 21, 2003.

Comparison of pre-test and post-test scores

Comparison of PreTest and PostTest Mean Scores



Data Analysis

MS Word, PowerPoint and Excel Pre and Post tests were compared using SPSS paired T-test analysis. The results showed that the students' pretest and posttest gains for MS Word and PowerPoint instruction were significant at $p \leq .05$ and $p \leq .02$, respectively. The students' gain scores for Excel were $p \leq .69$ and as such did not show significant differences. The null hypothesis for MS Word and PowerPoint treatment effects were rejected. The treatment effect for Excel was not rejected.