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WISCONSIN STATE LEGISLATURE ...
PUBLIC HEARING - COMMITTEE RECORDS

2005-06
(session year)

Assembly
(Assembly, Senate or Joint)

Committee on Colleges and Universities...

COMMITTEE NOTICES ...

➤ Committee Reports ... **CR**

➤ Executive Sessions ... **ES**

➤ Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

➤ Appointments ... **Appt** (w/Record of Comm. Proceedings)

➤ Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)

➤ Hearing Records ... bills and resolutions (w/Record of Comm. Proceedings)
  (**ab** = Assembly Bill)   (**ar** = Assembly Resolution)   (**ajr** = Assembly Joint Resolution)
  (**sb** = Senate Bill)   (**sr** = Senate Resolution)   (**sjr** = Senate Joint Resolution)

➤ Miscellaneous ... **Misc**

Assembly

Record of Committee Proceedings

Committee on Colleges and Universities

Assembly Bill 1142

Relating to: accessible instructional materials for student with disabilities enrolled in institutions of higher education.

By Representatives Seidel, Grigsby, Sheridan and Sinicki; cosponsored by Senator Erpenbach.

March 21, 2006   Referred to Committee on Colleges and Universities.

May 2, 2006   **PUBLIC HEARING HELD**

Present: (11)   Representatives Kreibich, Ballweg, Underheim, Nass, Jeskewitz, Towns, Shilling, Schneider, Black, Boyle and Molepske.

Absent: (1)   Representative Lamb.

Appearances For
- None.

Appearances Against
- None.

Appearances for Information Only
- None.

Registrations For
- None.

Registrations Against
- None.

May 4, 2006   Failed to pass pursuant to Senate Joint Resolution 1.

Brad Hub
Committee Clerk

March 16, 2006

222 McKinley
Eau Claire, WI 54701

Dear Representative Kreibich,

I'd like to introduce myself to you, share a few of my concerns, and offer to work with you in a couple of areas.

I'm a recently retired licensed clinical psychologist who worked at the University of Wisconsin-Eau Claire for fourteen years. I've published articles in professional journals, presented papers at national meetings and my memoir "*To the Left of Inspiration: Adventures in Living with Disabilities*" will be published this spring. I've received awards for my work from the University of Wisconsin Regents and the Courage Center among others. I've been blind from birth and am proud to have been a Seeing Eye dog user for over thirty years. I've established national book awards for children's books with disability themes and a scholarship for a student with a disability at UWEC. I'm an active member of the following boards: Newman Parish Council, Friends of the Library, The L. E. Phillips Memorial Public Library, Northwest Wisconsin Disability Coalition, Eau Claire Paratransit Appeals, Eau Claire County Transportation Coordination, Western Wisconsin Center for Independent Living, Statutory Council on Blindness, Disability Rights Wisconsin, and Wisconsin Council for the Blind and Visually Impaired.

In retirement I want to work for the full inclusion of people with disabilities in the good life we have in Wisconsin. The following issues are very important to me:

- Increasing the funding for the Regional Library for the Blind and Physically Handicapped contract. The contract has been red-lined for the past five years and it's the major library usable by ten thousand blind and visually-impaired Wisconsinites.
- Increase funding of public transportation within and between counties in rural Wisconsin. Poor, elderly, and disabled non-drivers need to go places!
- Fully fund services for the Office for the Blind and Visually-Impaired. Four and a half currently unfilled positions leave blind and visually impaired people in twenty-seven counties without services. Visually impaired elders without rehabilitation services often land in nursing homes at large costs in dollars and losses of freedom and independence.

I could go on, talking about accessible voting, dog guide issues, etc. but I'd rather leave you with an offer to help you. When you're considering a bill in the area of services for the blind or disabled and you want an opinion from someone who has 56 years of personal experience, please feel free to get in touch.

Katherine Schneider, Ph.D.
Email: schneiks@uwec.edu
Phone: 715-833-0977

Wisconsin Statutory Council on Blindness
Legislative Day, March 16, 2006

I.   Services provided by the Department of Health and Family Services Office for the Blind and Visually Impaired

Governor Doyle has stated that citizens with disabilities should have an option on where they want to live. If older people who are losing their vision do not receive independent living skills, they lose their independence and require either an assisted living environment or daily assisted care. In the spirit of Family Care that allows adults the privilege of choice, the statutory Council on Blindness asks that you fully fund the Department of Health and Family Services (DHFS)/ Office for the Blind and Visually Impaired (OBVI). *Please note on page 4, the last sentence of Wisconsin statute 46.293(2) states that the legislature should provide partial funding. The legislature has not put any additional funds into the rehabilitation teaching program in over 15 years.

The Council on Blindness requests that the legislature heed its obligation to Wisconsin citizens and allocate GPR to rehabilitation teaching services. Allocating revenue will allow the Office for the Blind and Visually Impaired to maintain a high level of service to all consumers who require assistance.

Background: The OBVI provides adjustment training to older adults so that they may live healthy and safely in a home of their choice. Each year the OBVI serves approximately 2,000 people, average age of 78, who are blind or visually impaired. The OBVI was under-funded in SFY2005 which resulted in 2.5 FTE professional vacancies in the field. This means that approximately 20 Wisconsin counties had their level of services compromised. Currently, the existing staff is traveling greater distances in order to serve more counties. Extended travel time creates operating inefficiencies in the delivery of rehabilitation teaching services. Though consumers continue to receive quality service, they are waiting weeks or months for those services. Their requests for service often come at the onset of vision loss, a critical time when they feel most vulnerable and in need of help.

II.   Consolidation of Services for the Blind and Visually Impaired

Services for adults who are blind or visually impaired are provided by three departments of state government—the Department of Health and Family Services (DHFS), the Department of Public Instruction (DPI), i.e., Adult Summer Program, and the Department of Workforce Development (DWD). The Council on Blindness believes that this multiplicity of departmental programs is inefficient, fiscally irresponsible, and compromises the quality of services. This divided service delivery system is antiquated and inefficient. Currently, the Wisconsin adult blind and visually

impaired population is encumbered by the need to access services among three different fiscal systems, management philosophies, regional divisions, quality assurance criteria, staff competencies, and communications systems.

It is time for the legislature to stop avoiding the issue and postpone the inevitable—a rapidly growing population of elderly citizens who need vision rehabilitation teaching services. The Council on Blindness proposes a consolidated VR agency for the blind to provide an efficient service delivery system and better rates of employment than Wisconsin's vocational rehabilitation service system (GOA Report 2005). These VR-blind agencies would contain all VR and independent living staff members who serve all adult clients. The Council on Blindness is asking that the issue of consolidation of services become a part of the next biennial budget. To begin in earnest, they propose that a work group be formed immediately to develop the details prior to January 2007.

Background: Twenty-five states have consolidated their blindness service delivery systems to create a single VR agency for the blind. These same states have a different VR agency to serve other disabilities. Fed3ral law allows state government to creat4e a single state agency, thus providing efficient and quality service.

III.   Wisconsin Regional Library for the Blind & Physically Handicapped

The Department of Public Instruction provides funding for the Library for the Blind and Physically Handicapped in Wisconsin. The Library for the Blind has not seen a budget increase since 1994. At that time, they had 16.5 FTE serving the blind and handicapped citizens of Wisconsin. Today, there are 13.5 FTE's doing the same job. Since 1994, the library has added services, including the circulation of descriptive videos, which verbally describe screen action, the National Federation of the Blind (NFB) Newsline, outreach services, and web access. They make every effort to maintain a high quality of service to their patrons. Unfortunately, as equipment ages, recordings wear and technology advances, the quality of service is compromised.

The Council requests the Wisconsin Department of Public Instruction be funded to allow the Library for the Blind and Physically Handicapped to catch up on the services provided, including the restoration of the FTE's to 16 full-time equivalencies.

Background: Housed at the Milwaukee Public Library, the regional library provides books on tape, in Braille and large print to thousands of Wisconsin residents with disabilities who are unable to read print. For many Wisconsinites, this is the primary, and frequently the sole source of reading material. The books are circulated free of charge from the U.S. Library of Congress, with free delivery by the U.S. Postal Service. In addition, the National Library Service for the Blind and Physically Handicapped of the Library of Congress provides the necessary equipment to play the books. In addition, the department and library fund the NFB Newsline which provides newspapers over the telephone. Having easy access to the news media and vast amounts of information allows citizens who are blind or visually impaired to stay informed and contribute to their communities.

IV.   Removing Taxes on Assistive Technology

Most blind and visually impaired people today use some kind of assistive technology. Although the cost for a computer can be under $400 today, consumers with visual impairments who need adaptive equipment may pay over $9,000. For many, the computer needs to talk, at an additional cost of $900. If the reader wants Braille display, add another $5,000. For print reading, add a scanner and a software program for $800. For Braille embossing, add $1,600; then another $600 for translation software from print to Braille. The $400 computer now costs a total of $9,300, or 23.25 times the price of a single computer and its software.

Although the state cannot reduce the retail costs of technology, it can reduce the overall cost burden to consumers. To alleviate this burden, the Council on Blindness urges the members of the legislature to give serious consideration to eliminating the sales tax on the purchase of assistive technology and adaptive equipment. This measure would encourage consumers to buy from Wisconsin businesses and afford them more readily available equipment and software support. The costs to the state would be negligible as the consumer savings realized would be spent on other Wisconsin products and services. The benefits to blind and visually impaired citizens would be immeasurable.

Background: Consumers who have residual vision use closed circuit televisions with cameras to read print that is too small to read with glasses. They use screen enlarging program for their computer. Screen enlarging software will cost $900, and a closed circuit television (CCTV) to read the manuals can cost $3,800. Again, the basic $400 system is now costing an additional $4,700, over ten times the cost of the original equipment. Some use electronic magnifiers to do daily tasks at home. Those without vision use programs that make the computer talk, Braille and speech note takers, scanning systems to read print material, and Braille embossers to make a readable copy of what they have written or read on the screen. Some use a refreshable Braille display so they can see spelling and punctuation.

3

Rehabilitation Teaching Services for the Blind and Visually Impaired provided by Wisconsin statute 46.293

s.46.293. Specialized programs for the Blind and Visually Impaired. The Department shall provide rehabilitation teaching services for persons who are blind or visually impaired including elderly persons and young persons and their parents or guardians, regardless of their eligibility for vocational rehabilitation services. These services may include assessments of each client's service needs, development of an individual service plan, instruction in Braille, training in orientation and movement in the person's home or neighborhood, counseling and guidance to increase the blind or visually impaired person's independence, instruction in the use of low-vision aids, personal and home management training, and instruction in leisure activities. In conjunction with the provision of these services the departments shall:

> **s.46.293(1).** Work with the blind and visually impaired persons, in a setting appropriate to each individual, to form rehabilitation plans for independent living to enable them to increase their self-reliance.

> **s.46.293(2).** Assist blind and visually impaired persons in physical orientation and personal adjustment.

The Biennial Budget Law approved by the Wisconsin Legislature and the Governor appropriates General Purpose Revenue (GPR) funds to pay part of the salaries and travel expenses of Rehabilitation Teachers and provides funding for program operations.*

Council on Blindness created by s15.197 and s.47:

> **s.15.197(2).** There is created in the Department of Health and Family services a council on blindness consisting of nine members appointed by the Secretary of Health and Family Services for staggered 3-year terms. At least seven of the persons appointed to the council shall be blind and visually impaired, as defined in s.47.01(1) or (5) and shall reflect a broad representation of blind or visually impaired persons. All council members shall have a recognized interested in and a demonstrated knowledge of the problems of the blind or visually impaired. Council members may be persons receiving services from the department. The council has the functions specific in s.47.03(9).

> **s.47.03(9).** The council on blindness shall make recommendations to the department and to any other state agency concerning procedures, policies, services, activities, programs, investigations and research that affect any problem of blind or visually impaired persons. The department shall consult with the council concerning its programs that affect blind or visually impaired persons; the council may initiate consultations with the department. Upon request, the department shall provide information to the council relating to matters concerning blind or visually impaired persons, but only information of a summary or statistical nature.
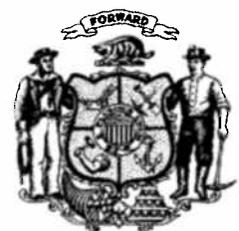
May 2, 2006
Testimony in Support of AB 1142
Accessible Instructional Materials for Students with Disabilities
Before the Assembly Committee on Colleges and Universities
Representative Rob Kreibich, Chair

The Wisconsin Technical College District Boards Association supports AB 1142, to assure that students with disabilities have maximum access to the most appropriate form of instructional materials available. We support this bill's broad objective: to remove any barriers for individuals created by the format itself or accessibility of available materials. As an organization representing governing boards, we are less able to comment on the specific provisions needed to realize this important objective. Rather, we support our instructional experts and learners themselves in seeking the best balance between learner needs and the evolving capability of instructional materials providers.

Wisconsin's economic future is closely tied to assuring that all citizens are able to seek effective and affordable education and training. That education and training must assure that all learners can realize their full potential. Much of the economic development and quality of life impact fostered by technical colleges is due to a focus on providing individual learners of all backgrounds, capabilities, and educational objectives with training that allows them to stay, work, and thrive in Wisconsin.

As much as tools vary depending on the task at hand, tools inevitably vary depending upon the individual using them. AB 1142 takes an important step toward assuring that the best available tools are accessible to the individuals needing them to accomplish the tasks at hand to move Wisconsin's economy forward.

On behalf of Wisconsin Technical College District Boards, we thank the bill's sponsors and hope the committee will add its support to AB 1142.

Paul Gabriel
Executive Director

DONNA SEIDEL
STATE REPRESENTATIVE
85TH ASSEMBLY DISTRICT

Testimony of Rep. Donna Seidel
Assembly Bill 1142
Assembly Committee on Colleges and Universities
May 2, 2006

Good morning Chairman Kreibich and committee members. Thank you for this opportunity to testify in support of AB 1142 which will make written materials accessible to students with disabilities enrolled in the UW System and our state's Technical College System.

The purpose of this bill is to ensure that any student in our Technical College System or UW System will have timely access to all written materials needed to be successful in their educational pursuits. For example, this means that for the blind and those with other physical or learning disabilities, materials will be available for them in formats such as Braille, large print or audio. It's not just the right thing to do; it's the smart thing to do.

AB 1142 requires publishers to make all written materials available in an electronic format that can be converted to meet the specific needs of the students. By giving equal access to written materials, students will be more successful, the cost of providing accommodations to students with disabilities will decline, our workforce will be expanded and our state's economy will be strengthened.

This bill provides the resources needed to establish a cooperative program between both the UW System and the Technical College System, and establishes a state repository in order to produce materials more efficiently. The repository would collect instructional materials from the publishers and produce the alternative formats for students enrolled at institutions of higher education across the state. Creating a successful repository could also allow Wisconsin to become a leader in this practice and eventually produce revenue if other states choose to use the resources that are produced.

You will hear from teachers and providers who are responsible for translating written text, as well as students and individuals who will directly benefit from this process. So, I will close and unless there are questions from the committee, will give others here the opportunity to talk with you.

Thank you for your attention to this important legislation.
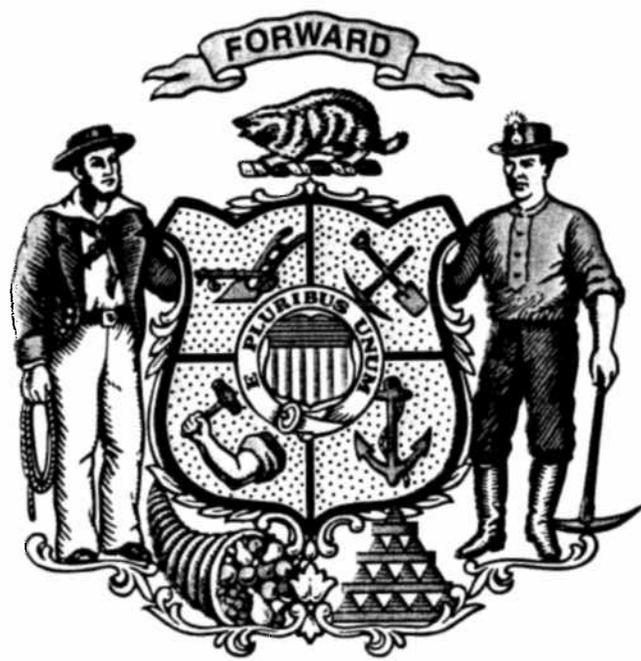
Dear Representative Kreibich,

Thank you and your committee for holding a hearing on a bill to provide electronic access to texts for print handicapped post-secondary students. Please feel free to read these comments into the record or share them with colleagues as you see fit.

In the late Sixties when I entered college as a totally blind student, I could get a few texts on records from Recordings for the Blind if I could order them a couple of months before the semester started. The rest of my texts had to be read to me by volunteers. The same was true in graduate school in the 1970's except the many journal articles we had to read were never available on tape. Hearing a statistics text read aloud by a sweet young woman volunteer who had never taken a math class so had no idea what the symbols were was the most painful.

Fast forward forty years from when I started undergraduate school to the world of today's print handicapped students. Talking computers can be used to search databases for electronic copies of journal articles and electronic copies of texts can be made accessible with a few clicks of a publisher's mouse. Technology has made it possible to level the playing field considerably. I've attached some information prepared by the National Federation for the Blind about a national bill similar to AB1142 that your committee might find to be useful background. Thank you again for considering this worthy legislation.

Sincerely,
Katherine Schneider, Ph.D.
Accessible Texts

Purpose: To require publishers of textbooks used in higher education to produce electronic editions for blind students in an accessible, non-visual standard format.

Background: Regardless of modern advancements in publishing technology, access to textbooks used in college courses remains a serious and unsolved problem for the blind. Help to meet the need for accessible texts is provided by on-campus disabled student service (DSS) offices, by libraries for the blind in some states, and by service organizations such as RFB&D (formerly Recording for the Blind and Dyslexic) and Bookshare.org. These organizations work hard to create audio and electronic editions of many textbooks in current use, but publishers can do far more than they currently do to support these efforts. Failure to provide equal access is a denial of equal opportunity.

Existing Law: The Americans with Disabilities Act; Section 504 of the Rehabilitation Act of 1973, as amended; and the Individuals with Disabilities Education Act, clearly establish the policy that individuals with disabilities are entitled to equal access to education. Successful implementation of this policy cannot occur without clear, specific, and practical standards and procedures designed to address accessibility needs. At present no specific law to support ready access to higher education textbooks for blind students is in place. By contrast, publishers of elementary and secondary school textbooks are required by law to produce electronic editions which must be prepared in an accessible, nonvisual format, meeting a federally prescribed national standard. This required procedure was enacted as part of the Individuals with Disabilities Education Improvement Act, Public Law 108-446, signed by President Bush in December 2004. Under this new law the U.S. Department of Education must issue a National Instructional Materials Accessibility Standard. Publishers are required to prepare electronic editions of textbooks sold to elementary and secondary schools in accordance with the national standard. The publisher's responsibility is met by placing a single electronic copy of each edition of a textbook in a national access center designated by law as the American Printing House for the Blind. This approach provides a model for similar procedures to be applied in higher education as well. Need for Legislation: Preparation of textbooks in an accessible, nonvisual format has become an achievable and reasonable expectation due to evolving methods in textbook publishing. In fact, although printed editions are still essentially the norm, electronic editions are becoming far more common. This trend toward using computers to access books will continue and expand in the decades ahead. However, standards do not exist for books prepared in print or electronic formats to be published for nonvisual use. Therefore, higher education institutions and taxpayer-funded

programs have assumed the burden of providing blind students with assistance and support to achieve access. With the appropriate technology now available, publishers can produce textbooks in accordance with a national access standard but have no incentive to do so. Recognizing this, eight states--Arkansas, California, Kentucky, Michigan, New Mexico, New York, Nevada, and Washington state--have passed laws requiring nonvisual access to college texts. These state laws are an important first step, but, by imposing an array of conflicting and inconsistent obligations on publishers, they emphasize the need for a uniform national standard. Proposed Legislation: Congress should enact the Higher Education Textbook Access Act. This will assure that blind college students have access to instructional texts like that available to blind elementary and secondary school students. This legislation would:
*   Within six months of enactment require the Secretary of Education to establish a National Nonvisual Access Standard for higher education textbooks and supplemental reading materials. This standard would be based on the national access standard used in elementary and secondary education, with appropriate modifications made for use in higher education.
*   Within one year of enactment designate a National Higher Education Textbook Access Center to receive electronic text editions from publishers and provide them to qualified blind students upon request. The Center would determine student eligibility based on criteria and procedures currently used by organizations such as RFB&D, Bookshare.org, and the National Library Service for the Blind and Physically Handicapped of the Library of Congress.
*   Within two years of enactment require publishers to provide the Center with at least one electronic copy of each edition of each textbook prepared in accordance with the national access standard. This obligation would apply to textbooks and supplemental reading materials intended for use by students or faculty in a course of instruction in higher education and would take effect at the time the textbook or supplemental reading material is first sold.

        Action Requested:
*   Please support blind Americans by working for passage of the Higher Education Textbook Access Act, when introduced, to assure that printed instructional materials are accessible to blind students in higher education.

Katherine Schneider, Ph.D.
Senior Psychologist, Emerita
Counseling Service
University of Wisconsin-Eau Claire
schneiks@uwec.edu

Knowing others is Wisdom, knowing yourself is Enlightenment. - LaoTzu
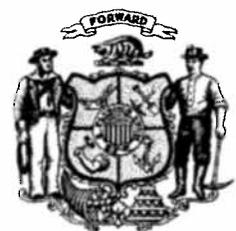
The RFB&D Story

Education is a Right, Not a Privilege"

Anne T. Macdonald was a member of the New York Public Library's Women's Auxiliary in 1948 when the letters started to arrive — letters from soldiers who had lost their sight in combat during World War II. Their stories were all the same. The soldiers had returned home, many anxious to move forward with their lives.

The newly-passed GI Bill of Rights provided that opportunity, guaranteeing a college education to all veterans of the war and those who would follow them. But for these blinded veterans, other obstacles prevented them from resuming their lives, including the inaccessibility of college textbooks. Could the Women's Auxiliary do something to help?

Macdonald then mobilized the women of the Auxiliary. Few veterans knew how to read braille, and live readers were difficult to come by, so the Women's Auxiliary moved on to a more creative solution. Keeping in mind Macdonald's conviction that "education is a right, not a privilege," Recording for the Blind® — as we were then known — was born.

They transformed the attic of the New York Public Library into a studio, and began recording textbooks for the servicemen, using what was then state-of-the-art technology: six-inch vinyl SoundScriber phonograph discs that played only 12 minutes of material per side.

Demand was so great that by 1951, our organization had incorporated as the nation's only nonprofit to record textbooks. The following year, Anne Macdonald traveled across the country to establish recording studios in seven additional cities. Today, in addition to our National Headquarters, we have 29 recording studios across the United States.

Our organization has evolved tremendously over the last 58 years and continues to do so. Although these changes seemed gradual at the time, history has shown that our transformation is truly dramatic. Our first headquarters in   New York City Our first headquarters
in New York City
By 1970, we found ourselves serving an increasing number of people who had learning disabilities. In recognition of this growing member population, we changed our name in 1995 to Recording for the Blind & Dyslexic, to serve all people with "print disabilities" — those who can't effectively read standard print because of a disability. Today, we serve 141,660 members worldwide, distributing 258,918 titles in 2005. Even more remarkable, more than 70 percent of our membership — which includes students in kindergarten through graduate school, as well as working professionals — are recognized with learning disabilities.

Our recording technologies have changed with the times. SoundScriber discs were long ago replaced with the high-fidelity, four-track cassettes still in use today. In September 2002, RFB&D's AudioPlus® digitally recorded textbooks on CD were released. Eventually, members will have access to digitally recorded versions of many of more than 109,106 titles in our CV Starr Learning Through Listening® Library.
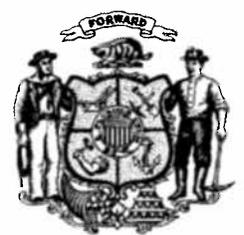
Access to Textbooks

I. Introduction to Talking Books
    A. What is a Talking Book?
    B. Why did they evolve?

II. Developers' of Talking Books
    A. Recordings for the Blind & Dyslexic
    B. Accommodations Office

III. Formats of Talking Books
    A. Traditional Cassettes
    B. DAISY (Digital Accessible Information System) Talking Book
    C. Electronic Books (E-books)
    D. MP3 Books

IV. Problems with today's Talking Books
    A. Timeliness from publishers'
    B. Missing text
    c. Errors
    D. Improper format to access

V. Solution/Conclusion
    A. Access to Textbook law
    B. Digital Textbook Repository

Microsoft Office Excel 2003

• **Click the AutoSum button a second time.**

Excel enters the sum of the second quarter sales for the Direct Mail sales channel in cell B8 (Figure 1-31). The SUM function assigned to cell B8 appears in the formula bar when cell B8 is the active cell.
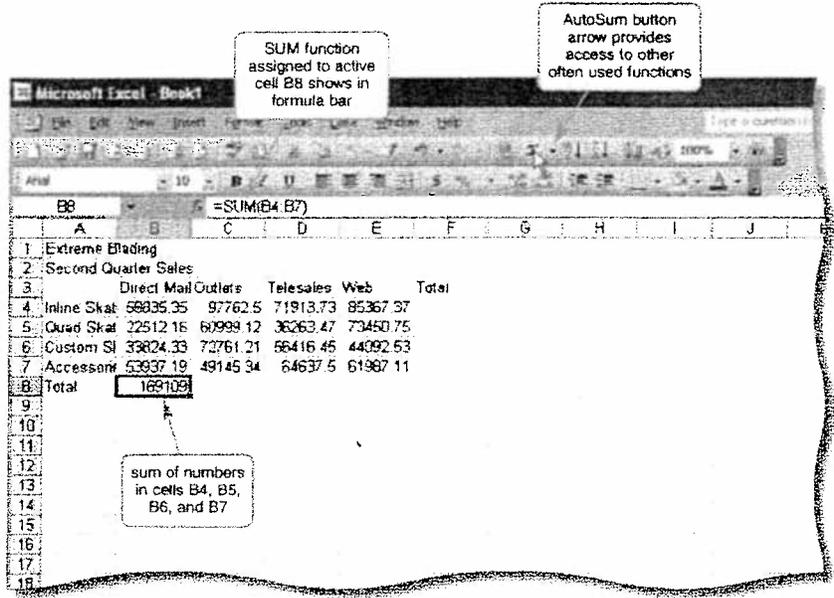

SUM function assigned to active cell B8 shows in formula bar

AutoSum button arrow provides access to other often used functions

sum of numbers in cells B4, B5, B6, and B7

FIGURE 1-31

Other Ways

1. Click Insert Function button in formula bar, select SUM in Select a function list, click OK button, select range, click OK button
2. On Insert menu click Function, select SUM in Select a function list, click OK button, select range, click OK button
3. Press ALT+EQUAL SIGN (=) twice
4. In Voice Command mode, say "AutoSum, Sum, Enter"

When you enter the SUM function using the AutoSum button, Excel automatically selects what it considers to be your choice of the range to sum. When proposing the range to sum, Excel first looks for a range of cells with numbers above the active cell and then to the left. If Excel proposes the wrong range, you can correct it by dragging through the correct range before clicking the AutoSum button a second time. You also can enter the correct range by typing the beginning cell reference, a colon (:), and the ending cell reference.

If you click the AutoSum button arrow on the right side of the AutoSum button, Excel displays a list of often used functions from which you can choose. The list includes functions that allow you to determine the average, the minimum value, or the maximum value of a range of numbers.

Using the Fill Handle to Copy a Cell to Adjacent Cells

Excel also must calculate the totals for Outlets in cell C8, Telesales in cell D8, and for Web in cell E8. Table 1-2 illustrates the similarities between the entry in cell B8 and the entries required to sum the totals in cells C8, D8, and E8.

CELL	SUM FUNCTION ENTRIES	REMARK
B8	=SUM(B4:B7)	Sums cells B4, B5, B6, and B7
C8	=SUM(C4:C7)	Sums cells C4, C5, C6, and C7
D8	=SUM(D4:D7)	Sums cells D4, D5, D6, and D7
E8	=SUM(E4:E7)	Sums cells E4, E5, E6, and E7

2

• **Press the ENTER key.**

Excel changes the active cell from cell A10 to cell A3 (Figure 1-55).
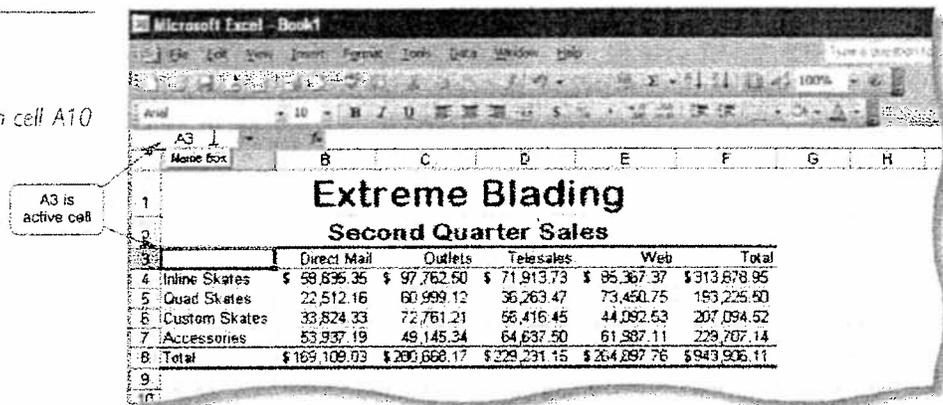

A3 is active cell

FIGURE 1-55

As you will see in later projects, in addition to using the Name box to select any cell in a worksheet, you also can use it to assign names to a cell or range of cells. Excel supports several additional ways to select a cell, as summarized in Table 1-3.

KEY, BOX, OR COMMAND	FUNCTION
ALT+PAGE DOWN	Selects the cell one worksheet window to the right and moves the worksheet window accordingly.
ALT+PAGE UP	Selects the cell one worksheet window to the left and moves the worksheet window accordingly.
ARROW	Selects the adjacent cell in the direction of the arrow on the key.
CTRL+ARROW	Selects the border cell of the worksheet in combination with the arrow keys and moves the worksheet window accordingly. For example, to select the rightmost cell in the row that contains the active cell, press CTRL+RIGHT ARROW. You also can press the END key, release it, and then press the appropriate arrow key to accomplish the same task.
CTRL+HOME	Selects cell A1 or the cell one column and one row below and to the right of frozen titles and moves the worksheet window accordingly.
Find command on Edit menu or SHIFT+F5	Finds and selects a cell that contains specific contents that you enter in the Find dialog box. If necessary, Excel moves the worksheet window to display the cell. You also can press CTRL+F to display the Find dialog box.
Go To command on Edit menu or F5	Selects the cell that corresponds to the cell reference you enter in the Go To dialog box and moves the worksheet window accordingly. You also can press CTRL+G to display the Go To dialog box.
HOME	Selects the cell at the beginning of the row that contains the active cell and moves the worksheet window accordingly.
Name box	Selects the cell in the workbook that corresponds to the cell reference you enter in the Name box.
PAGE DOWN	Selects the cell down one worksheet window from the active cell and moves the worksheet window accordingly.
PAGE UP	Selects the cell up one worksheet window from the active cell and moves the worksheet window accordingly.

When the numbers are entered into the cells in column B, Excel only partially displays the row titles in column A. When the worksheet is formatted later in the project, the row titles will appear in their entirety.

Steps 1 through 3 complete the numeric entries. Excel does not display trailing zeros in cells C4 and D7. You are not required to type dollar signs, commas, or trailing zeros. When you enter a dollar value that has cents, however, you must add the decimal point and the numbers representing the cents. Later in this project, the numbers will be formatted to use dollar signs, commas, and trailing zeros to improve the appearance and readability of the numbers.

Q: What are the limits on numeric entries in Excel?
A: In Excel, a number can be between approximately -1×10^{308} and 1×10^{308} – that is, between a negative 1 followed by 308 zeros and a positive 1 followed by 308 zeros. To enter a number such as 6,000,000,000,000,000, you can type 6,000,000,000,000,000, or you can type 6E15, which stands for 6×10^{15}.

Calculating a Sum

The next step in creating the worksheet is to determine the total second quarter sales for the Direct Mail sales channel in column B. To calculate this value in cell B8, Excel must add, or sum, the numbers in cells B4, B5, B6, and B7. Excel's **SUM function**, which adds all of the numbers in a range of cells, provides a convenient means to accomplish this task.

A **range** is a series of two or more adjacent cells in a column or row or a rectangular group of cells. For example, the group of adjacent cells B4, B5, B6, and B7 is called a range. Many Excel operations, such as summing numbers, take place on a range of cells.

The following steps show how to sum the numbers in column B.

To Sum a Column of Numbers

1. Click cell B8. Cell B8 becomes the active cell.
2. Click the AutoSum button on the Standard toolbar. Excel responds by displaying =SUM(B4:B7) in the formula bar and in the active cell B8. Excel displays a ScreenTip below the active cell. The B4:B7 within parentheses following the function name SUM is Excel's way of identifying that the SUM function will add the numbers in the range B4 through B7. Excel also surrounds the proposed cells to sum with a moving border, called a marquee.
3. Click the AutoSum button a second time. Excel enters the sum of the second quarter sales for the Direct Mail sales channel in cell B8. The SUM function assigned to cell B8 appears in the formula bar when cell B8 is the active cell.

Another Way:
1. Click Insert Function button in formula bar, select SUM in Select a function list, click OK button, select range, click OK button
2. On Insert menu click Function, select SUM in Select a function list, click OK button, select range, click OK button
3. Press alt+equal sign (=) twice
4. In Voice Command mode, say "AutoSum, Sum, Enter"

When you enter the SUM function using the AutoSum button, Excel automatically selects what it considers to be your choice of the range to sum. When proposing the range to sum, Excel first looks for a range of cells with numbers above the active cell and then to the left. If Excel proposes the wrong range, you can correct it by dragging through the correct range before clicking the AutoSum button a second time. You also can enter the correct range by typing the beginning cell reference, a colon (:), and the ending cell reference.

If you click the AutoSum button arrow on the right side of the AutoSum button, Excel displays a list of often used functions from which you can choose. The list includes functions that allow you to determine the average, the minimum value, or the maximum value of a range of numbers.

Using the Fill Handle to Copy a Cell to Adjacent Cells

Excel also must calculate the totals for Outlets in cell C8, Telesales in cell D8, and for Web in cell E8. Table 1-2 illustrates the similarities between the entry in cell B8 and the entries required to sum the totals in cells C8, D8, and E8. Table 1-2 Sum Function Entries in Row 8.

Table 1-2

Cell	SUM Function Entries	Remark
B8	=SUM(B4:B7)	Sums cells B4, B5, B6, and B7
C8	=SUM(C4:C7)	Sums cells C4, C5, C6, and C7
D8	=SUM(D4:D7)	Sums cells D4, D5, D6, and D7
E8	=SUM(E4:E7)	Sums cells E4, E5, E6, and E7

To place the SUM functions in cells C8, D8, and E8, follow the same steps shown previously in Figures 1-29 through 1-31. A second, more efficient method is to copy the SUM function from cell B8 to the range C8:E8. The cell being copied is called the **source area** or **copy area**. The range of cells receiving the copy is called the **destination area** or **paste area**.

Although the SUM function entries in Table 1-2 are similar, they are not exact copies. The range in each SUM function entry uses cell references that are one column to the right of the previous column. When you copy cell references, Excel automatically adjusts them for each new position, resulting in the SUM function entries illustrated in Table 1-2. Each adjusted cell reference is called a **relative reference**.

The easiest way to copy the SUM formula from cell B8 to cells C8, D8, and E8 is to use the fill handle. The **fill handle** is the small black square located in the lower-right corner of the heavy border around the active cell. The following steps show how to use the fill handle to copy cell B8 to the adjacent cells C8:E8.

To Copy a Cell to Adjacent Cells in a Row

1. With cell B8 active, point to the fill handle. The mouse pointer changes to a cross hair.
2. Drag the fill handle to select the destination area, range C8:E8. Do not release the mouse button. Excel displays a shaded border around the destination area, range C8:E8, and the source area, cell B8.
3. Release the mouse button. Excel copies the SUM function in cell B8 to the range C8:E8. In addition, Excel calculates the sums and enters the results in cells C8, D8, and E8. The Auto Fill Options button appears to the right and below the destination area.

Another Way:

1. Select source area, on Edit menu click Copy, select destination area, on Edit menu click Paste
2. Right-click source area, click Copy on shortcut menu, right-click destination area, click Paste on shortcut menu
3. Select source area and then point to border of range; while holding down CTRL key, drag source area to destination area
4. Select source area, press CTRL+C, select destination area, press CTRL+V
5. In Voice Command mode, [select source area], say "Copy", [select destination area], say "Paste"

Once the copy is complete, Excel continues to display a heavy border and transparent blue background around cells B8:E8. The heavy border and transparent blue background are called **see-through view** and indicates a selected range. Excel does not display the transparent blue background around cell B8, the first cell in the range, because it is the active cell. If you click any cell, Excel will remove the heavy border and transparent blue background of the see-through view.

When you copy one range to another, Excel displays an Auto Fill Options button to the right and below the destination area. The Auto Fill Options button allows you to choose whether you want to copy the values from the source area to the destination area with formatting, without formatting, or only copy the format. To view the available fill options, click the Auto Fill Options button. The Auto Fill Options button disappears when you begin another activity.

Determining Multiple Totals at the Same Time

The next step in building the worksheet is to determine total second quarter sales for each product group and total second quarter sales for the company in column F. To calculate these totals, you can use the SUM function much as you used it to total the sales by sales channel in row 8. In this example, however, Excel will determine totals for all of the rows at the same time. The following steps illustrate this process.

To Determine Multiple Totals at the Same Time

1. Click cell F4. Cell F4 becomes the active cell.
2. With the mouse pointer in cell F4 and in the shape of a block plus sign, drag the mouse pointer down to cell F8. *Excel highlights the range F4:F8 with a see-through view.*
3. **Click the AutoSum button on the Standard toolbar.** Excel assigns the appropriate SUM functions to cells F4, F5, F6, F7, and F8, and then calculates and displays the sums in the respective cells.
4. **Select cell A9 to deselect the range F4:F8.**

If each cell in a selected range is next to a row of numbers, Excel assigns the SUM function to each cell when you click the AutoSum button. Thus, as shown in the previous steps, each of the five cells in the selected range is assigned a SUM function with a different range, based on its row. This same procedure could have been used earlier to sum the columns. That is, instead of clicking cell B8, clicking the AutoSum button twice, and then copying the SUM function to the range C8:E8, the range B8:E8 could have been selected and then the AutoSum button clicked once, which would have assigned the SUM function to the entire range.

Summing Columns and Rows

A more efficient way to determine the totals in row 8 and column F is to select the range (B4:F8) and then click the AutoSum button on the Standard toolbar.

Calculating a Sum

The next step in creating the worksheet is to determine the total second quarter sales for the Direct Mail sales channel in column B. To calculate this value in cell B8, Excel must add, or sum, the numbers in cells B4, B5, B6, and B7. Excel's **SUM function**, which adds all of the numbers in a range of cells, provides a convenient means to accomplish this task.

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The following steps show how to sum the numbers in column B.

To Sum a Column of Numbers

* **Click cell B8.**

Cell B8 becomes the active cell (Figure 1-29).

1. Click Insert Function button in formula bar, select SUM in Select a function list, click OK button, select range, click OK button

2. On Insert menu click Function, select SUM in Select a function list, click OK button, select range, click OK button

3. Press ALT+EQUAL SIGN (=) twice

4. In Voice Command mode, say "AutoSum, Sum, Enter"

When you enter the SUM function using the AutoSum button, Excel automatically selects what it considers to be your choice of the range to sum. When proposing the range to sum, Excel first looks for a range of cells with numbers above the active cell and then to the left. If Excel proposes the wrong range, you can correct it by dragging through the correct range before clicking the AutoSum button a second time. You also can enter the correct range by typing the beginning cell reference, a colon (:), and the ending cell reference.

If you click the AutoSum button arrow on the right side of the AutoSum button, Excel displays a list of often used functions from which you can choose. The list includes functions that allow you to determine the average, the minimum value, or the maximum value of a range of numbers.

Using the Fill Handle to Copy a Cell to Adjacent Cells

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Table 1-2 Sum Function Entries in Row 8

CELL	SUM FUNCTION ENTRIES	REMARK
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C8	=SUM(C4:C7)	Sums cells C4, C5, C6, and C7

To place the SUM functions in cells C8, D8, and E8, follow the same steps shown previously in Figures 1-29 through 1-31. A second, more efficient method is to copy the SUM function from cell B8 to the range C8:E8. The cell being copied is called the **source area** or **copy area**. The range of cells receiving the copy is called the **destination area** or **paste area**.

Although the SUM function entries in Table 1-2 are similar, they are not exact copies. The range in each SUM function entry uses cell references that are one column to the right of the previous column. When you copy cell references, Excel automatically adjusts them for each new position, resulting in the SUM function entries illustrated in Table 1-2. Each adjusted cell reference is called a **relative reference**.

The easiest way to copy the SUM formula from cell B8 to cells C8, D8, and E8 is to use the fill handle. The **fill handle** is the small black square located in the lower-right corner of the heavy border around the active cell. The following steps show how to use the fill handle to copy cell B8 to the adjacent cells C8:E8.

To Copy a Cell to Adjacent Cells in a Row

• **With cell B8 active, point to the fill handle.**

The mouse pointer changes to a cross hair (Figure 1-32).

FIGURE 1-32

cross hair indicates fill handle is selected