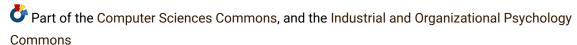4-1992

A Survey of Computer Use in Occupational Therapy Fieldwork Sites

Martha E. Parks
Western Michigan University

A SURVEY OF COMPUTER USE IN
OCCUPATIONAL THERAPY
FIELDWORK SITES

by

Martha E. Parks

A Thesis
Submitted to the
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A SURVEY OF COMPUTER USE IN
OCCUPATIONAL THERAPY
FIELDWORK SITES

Martha E. Parks, M.S.

Western Michigan University, 1992

Eighty-three Western Michigan University occupational therapy fieldwork sites were surveyed to determine: (a) extent of computer use, (b) diagnostic categories with which computers are used, (c) extent of computer knowledge of registered occupational therapists (OTRs), and (d) adequacy of computer knowledge of fieldwork students. Forty-seven (56.6%) of the 83 surveys were returned. OTRs at 36 (76.6%) of the 47 sites currently use computers. Word processing is the most common way in which these OTRs use computers. The most common clinical use of computers is perceptual/motor assessment and treatment, while the most common research use of computers is for report writing. Head injury, CVA, and motor disorders are the diagnostic categories with which computers are most commonly used. Twenty-six (55.3%) of the 47 sites employ at least one OTR with three or more years of computer experience. Fifteen (31.9%) of the sites employ at least one OTR who has never used a computer.

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<div style="text-align: right">Martha E. Parks</div>

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INTRODUCTION

The advent of computers during the past two decades has made a significant impact in nearly every field. Occupational therapy is no exception. Computers are being used by occupational therapists for a variety of administrative, clinical, and research purposes. This study investigated how computers are being used in facilities that serve as fieldwork sites for the occupational therapy department of a midwestern university.

In the early 1970s, two authors, E. I. Smith (1973) and English (1975), discussed the potential uses of computers in occupational therapy. E. I. Smith (1973) investigated employment opportunities in the field of Information Technology for homebound disabled persons. She described the Homebound Employment Project at George Washington University, Washington, D.C., which was "taking one step forward in implementing modern technology that [was then] available in the information industry for the benefit of the homebound disabled" (p. 232). E. I. Smith also discussed the role of the occupational therapist in the Homebound Employment Project.

English (1975) described the then-current uses of computers by occupational therapists and suggested possible

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future uses. English also introduced and defined the concepts of computers and computer programming, outlined advantages and disadvantages of computer use, and offered suggestions for easing the acceptance of computers by occupational therapists.

Computers currently perform a wide variety of functions in the field of occupational therapy. One such function is as an administrative tool in occupational therapy departments. Wamboldt (1986b) describes three types of software programs used for administrative purposes in occupational therapy: data base, spreadsheet, and word processing. She notes that a data base program is appropriate for organizing large amounts of information, such as patient files, attendance records, inventory lists, vendor lists, and purchase order records. Spreadsheets, which allow one to work with numbers in rows and columns, can be useful for preparing reports of monthly statistics, such as productivity of individual therapists, or for preparing department budgets. A word processor may be used for creating, storing, and printing patients' reports, as well as for creating and updating home programs for patients.

The three functions of data base, spreadsheet, and word processing are available in integrated software packages. A therapist using integrated software can easily shift from one function to another or can use two or three

of the functions simultaneously. For example, the therapist could extract attendance data from a spreadsheet program and insert it into a monthly report created with the word processor.

While computers are used by many occupational therapists as administrative tools, the use of computers is not limited to administration. Computers are currently being used in a variety of clinical applications. Computer-based environmental control units (ECUs) are an example of such a clinical application. The computer-based ECU enables a disabled person to operate electrical devices remotely, using a control such as a pneumatic switch, a pressure switch, or "voice input" (Sidler, 1986). The disabled person is also afforded the ability to use the computer as a tool, just as a non-disabled person could. As Vanderheiden (1982) points out, "it is very important to remember that disabled people also need to use the same programs and accomplish the same tasks as anyone else" (p. 136). ECUs may be used by severely physically disabled individuals, allowing them "unexpected levels of independence and freedom...to say nothing of the potentials it offers for reduced attendant care for personal needs" (Sidler, 1986, p. 60).

Another clinical use of computers is augmentative communication. Augmentative communication refers to "ways in which microcomputers and related aids are used to

'speak' for individuals who are non-vocal" (Sidler, 1986,
p. 63). "Peripheral devices"--equipment used to enter
data, retrieve data, or transfer data to a storage medium--
may be added to the computer to enable it to "speak," or
the computer itself may have a built-in "speaking" device.
The use of microcomputers has been explored to assist the
disabled with conversation and to improve communication
both in writing and by telephone (Vanderheiden, 1981).
Treviranus and Tannock (1987) described a "scanning" key-
board that allows a physically disabled person to access
the computer using an appropriate switch. (A switch is a
device that translates volitional movement into an elec-
tronic signal recognized by the computer. The switch may
be activated by any specific voluntary movement, such as
head movement, eyebrow movement, sipping, or puffing, that
the individual can reliably control.) The authors used
case studies involving two young boys with cerebral palsy
to illustrate the potential communicative uses of the
scanning keyboard.

Cognitive retraining is another area in which occupa-
tional therapists are using computers in a clinical set-
ting. "The 1991 Closing The Gap Resource Directory" (1991)
lists software that is currently available for use in
special education or rehabilitation. The software is
listed under three general categories of software: Access
Software, Skill Development Software, and Professional

Management Software. Skill Development Software includes, among other categories, a category of software called "Cognitive Redevelopment." The directory defines Cognitive Redevelopment Software as "software that provides retraining in skills lost through trauma" (p. 206). This software is used to treat deficits in problem-solving, attention, cognitive strategies, visual scanning, reaction time, conceptual skills, memory skills, and auditory and visual discrimination. The directory lists more than 200 pieces of Cognitive Redevelopment Software that are presently available to rehabilitation professionals.

Computers are also being used clinically in vocational training and retraining (Glenn, Miller, & Broman, 1976). As early as 1976, occupational therapists were experimenting with using "voice control" to enable two quadriplegic clients to program a remotely-located computer entirely through the use of a "voice terminal." Voice control has led to new possibilities in the area of employment in the information industry for the severely disabled. Bush and Peterson (1990) stated that "innovative employment technology has been developed through robotic assistive devices to enable individuals to return to an independent work setting by providing the user control of the environment through voice activation" (p. 51). Bush and Peterson described a voice-activated robotic work cell that enables individuals with severe upper extremity limitations to use a micropro-

cessor-based workstation to perform two office management functions. The workstation is equipped with a robotic arm that can perform functions such as retrieving printed materials from shelves or from a printer. The workstation also makes it possible to place and receive phone calls and to store phone numbers in a directory.

Computers are also being used in the assessment of occupational therapy clients. OT FACT (Functional Assessment Compilation Tool), a new software program for collecting, compiling, and reporting assessment data, is being marketed by the American Occupational Therapy Association (AOTA) (R. O. Smith, 1990). OT FACT is used to manage data from assessments. It is designed to pull together information gathered from existing occupational therapy evaluation instruments and provide an overall functional performance profile of a client (AOTA, 1990, p. 79). OT FACT compiles evaluations in five areas: role integration, activities of performance, integration skills of performance, components of performance, and environment.

There are also numerous pieces of software on the market that are designed to be used in the actual assessment of the client. This software typically measures visual/perceptual skills, attention, conceptual skills, or problem-solving skills. Assessment software is often reviewed in "Software and Technology Reviews," a column that appears periodically in The American Journal of Occupation-

al Therapy.

Recreational software is also currently available to the occupational therapist for clinical use. Sidler (1986) describes the advantage of using computer games in treatment:

> Many computer "arcade" games can be selected and adapted for clinical use by applying traditional activity analysis concepts in identifying their features. While most therapists now prefer educational game software, the motivational qualities of recreational games may be a great help with an unresponsive or withdrawn patient. (p. 76)

Computers may be used clinically in the treatment of perceptual deficits. As Wamboldt (1986a) states: "The computer has the ability to present precise stimuli and provide non-biased, encouraging responses, as well as to report objective data on the patient's progress" (p. 26). The stimuli presented by the computer are designed to challenge the patient with perceptual deficits to learn new compensatory techniques.

In addition to using computers for administrative and clinical purposes, occupational therapists are also using computers in research. A study by Nelson, Peterson, Smith, Boughton, and Whalen (1988) describes a research protocol in which computers were used as data collection tools. Each of three observers had a portable computer. The computer of the middle observer was programmed to signal recording intervals through "beeps" that were audible only

to the observers. The three computers were programmed to create a data file from the observers' responses to visual prompts as they appeared on the computer display.

Using a computer as a data collection tool makes it easier for the occupational therapist to collect research data. Additionally, the uniting of physiological monitoring equipment and microcomputers has made occupational therapy research easier to conduct. As Sidler (1986) states:

> Practicing therapists can now collect data and raise research questions that were once impossible except in settings designed for research. Data can be automatically selected and stored for individual patients, for example. Baseline data can be compared over time with treatment sessions to determine progress. (p. 69)

Occupational therapists are also using computerized literature search services to assist with research. One such service, OTDBASE, is a clinically-oriented index and data base that contains relevant information about all articles published in eight occupational therapy journals from 1970 to the present (Ernest, 1990). OTDBASE contains only occupational therapy literature, and it is the only service that contains information about all of the articles found in all eight of the journals. The occupational therapy researcher can search for articles about a particular topic.

OT SOURCE is another computer information system available to assist occupational therapists with research

("OT SOURCE to be Demonstrated," 1991). OT SOURCE features a series of data bases and electronic bulletin boards that can easily be accessed from a computer using a "modem." (A modem is a device that transmits computer data over telephone lines.) The data bases include OT Bibliographic System (an in-depth library of occupational therapy literature), Job Bank (with listings of occupational therapy positions across the country), AOTA Products Catalog (which contains the latest publications and products available from AOTA), and Official Actions (official documents of AOTA). The bulletin boards available through OT SOURCE include professional resource listings, AOTA's volunteer sector VIPs, Continuing Education and Association Calendars, and a "Member Q & A Board" that allows users of OT SOURCE to communicate with one another.

In recent years, numerous studies have been conducted to determine how occupational therapists (and other health professionals) are using computers. Spicer and McMillan (1987) conducted a survey of 298 occupational therapy department directors to elicit (a) department demographics; (b) availability of computers; (c) types of hardware, software, and peripheral devices used; (d) major purposes and functions for computers; (e) important factors regarding the choice of computers and equipment; and (f) the factors most influential in inhibiting the use of computers.

Another study of occupational therapists (Marina, 1984) surveyed 34 Ontario rehabilitation units to determine how occupational therapists use microcomputers for patient treatment.

A third study (McCray & Blakemore, 1985) investigated a number of aspects of computer use in rehabilitation facilities, using a two-phase study of approximately 4,200 rehabilitation facilities nationwide. The study identified: (a) the current extent of computer use in rehabilitation facilities; (b) how computers are being used in administration, rehabilitation services, and production management; (c) the specific types of hardware and software configurations that have been installed; (d) the trends that are likely to lead to the increased use of computers in rehabilitation facilities; and (e) the feasibility of developing a national network of rehabilitation facility computer users.

None of these surveys addressed the question of whether or not occupational therapy students are receiving adequate education and training in the use of computers. Nor did they mention education and training of therapists in facilities where computers are in use. According to Nave and Browning (1983), however, education is an important consideration:

> Rehabilitation professionals do indeed have a major responsibility to become aware of and responsive to the technological advancements that have application for the field. One way in which

this goal can and should be accomplished is through long-term educational programs. (p. 365)

Similarly, in a study conducted by Yuen, Smith, and Alldredge (1991), the majority (61%) of the graduate-level occupational therapy students from four universities in the Eastern United States who were surveyed agreed that an introductory computer course should be included in the occupational therapy curriculum. Additionally, 94% of the respondents planned to learn more about using computers within the next two years, though fewer than one-third of the respondents had received any formal computer training in their undergraduate or graduate programs.

Several articles have described occupational therapy departments at different universities that do include technology and computer courses in their curricula. Gilkeson and Krouskop (1987) described a graduate-level program in rehabilitation technology at Texas Woman's University (TWU), Denton, Texas:

> The curriculum in this program has been designed to achieve the following goals: (a) provide occupational therapists with a background in basic engineering technology concepts and principles and (b) provide instruction for practicing occupational therapists and other appropriate rehabilitation professionals in currently available technology to help them serve their disabled clientele in a more cost-effective manner. (p. 751)

The University of Wisconsin-Madison is another university that offers an occupational therapy curriculum with a specialization that incorporates technology-related courses

(R. O. Smith, 1989). This program is an interdisciplinary technology program called TechSpec, which has two major thrusts: (1) direct training and (2) development and distribution of training materials. Direct training occurs at the foundation level (elective courses only) or at the specialization level (required courses as well as electives). The training materials that are developed and distributed include teaching workbooks/guides and an implementation manual for TechSpec. These materials are offered, at cost, to faculties of other institutions, to curriculum planners, and to the public.

The occupational therapy department at Boston University offers a sequence of graduate-level courses leading to a master's degree with a specialization in computer technology (Ruben, 1990). Students in the program take two core courses that teach them how to adapt computers for people with disabilities. A practicum is required after each computer course. To complete the computer technology sequence, students take courses on physical disabilities or on computers.

As the recent literature shows, computers are being used by occupational therapists for a variety of purposes. In addition, the occupational therapy departments of at least three universities include technology and computer courses in their curricula. No literature was found, however, that discussed the computer training and knowledge

obtained by occupational therapy students in other universities. Additionally, no literature was found that addressed student preparation for computer usage during fieldwork experiences.

This study of fieldwork sites was conducted to determine: (a) the extent of computer software and hardware use, (b) the diagnostic categories with which computers are used, (c) the extent of computer knowledge of registered occupational therapists (OTRs), and (d) the adequacy of computer knowledge of fieldwork students.

METHOD

Sample

The sample was obtained by compiling a list of occupational therapy level II fieldwork sites which have had at least one Western Michigan University (WMU), Kalamazoo, occupational therapy fieldwork student per year in each of two of the years 1988, 1989, and 1990. Eighty-three fieldwork sites met these criteria.

Instrumentation

A survey was developed to elicit: (a) demographic information, (b) extent of computer use, (c) computer hardware/equipment use, (d) computer software use, (e) extent of computer knowledge of OTRs, and (f) extent of computer knowledge of fieldwork students.

The survey was reviewed by three occupational therapists who use computers and are familiar with research design. Their suggestions for improving the design and clarity of the survey were incorporated into the final version. See Appendix A for a copy of the survey.

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Procedure

The survey was mailed to fieldwork supervisors at each of the fieldwork sites in the sample. A cover letter, attached to each survey, requested that the fieldwork supervisor forward the survey to the head of each occupational therapy department, and that the head of the department complete and return the survey within two weeks. A reminder card was mailed to the fieldwork sites asking the head of each occupational therapy department to return the survey if he or she had not already done so. Of the 83 surveys distributed, 47 (56.6%) were returned.

RESULTS

Thirty-three (70.2%) of the respondents chose to identify their sites. Of those, 17 (51.5%) were from Michigan, four (12.1%) from Illinois, three (9.1%) from Indiana, two each (6.1% each) from Ohio and California, and one each (3.0% each) from Connecticut, Georgia, Maryland, Virginia, and Wisconsin.

Forty-five sites provided information about the number of OTRs employed at the site. This number ranged from 1 to 55, with an average of 7.82 OTRs per site. Twenty-seven sites provided information about the number of clients served by their OTRs during 1990. This number ranged from 22 to 7,596 clients, with an average of 810.44 clients served per site in 1990.

OTRs at 36 (76.6%) of the 47 sites are currently using computers. These OTRs are using computers for a variety of administrative, clinical, and research purposes. In addition, OTRs at 3 (6.4%) of the sites plan to begin using computers within 60 months, while OTRs at 8 (17.0%) of the sites do not currently use computers and do not plan to begin using them within 60 months. Table 1 gives additional information on the number of sites currently using, planning to use, or not planning to use computers for

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Table 1

Present and Intended Future Computer Use
of OTRs at Fieldwork Sites (n=47)

Computer Use	Presently Using	Plan to use With- in 60 Months	Do not Plan to use With- in 60 Months
ADMINISTRATIVE			
Word Processing	27 (57.4%)	3 (6.4%)	17 (36.2%)
Generating Reports	18 (38.3%)	5 (10.6%)	24 (51.1%)
Accounting/ Bookkeeping	16 (34.0%)	2 (4.3%)	29 (61.7%)
Data Base/ Mailing Lists	14 (29.8%)	4 (8.5%)	29 (61.7%)
Graphics	13 (27.6%)	3 (6.4%)	31 (66.0%)
Spreadsheets/Bus- iness Projections	12 (25.5%)	4 (8.5%)	31 (66.0%)
Quality Assurance	10 (21.3%)	5 (10.6%)	32 (68.1%)
CLINICAL			
Perceptual/Motor	26 (55.3%)	4 (8.5%)	17 (36.2%)
Cognitive Training/ Retraining	24 (51.1%)	4 (8.5%)	19 (40.4%)
Recreation/Games	21 (44.7%)	2 (4.2%)	24 (51.1%)
Communication	20 (42.6%)	4 (8.5%)	23 (48.9%)
Assessment	14 (29.8%)	6 (12.8%)	27 (57.4%)
Vocational Train- ing/Retraining	14 (29.8%)	4 (8.5%)	29 (61.7%)
Environmental Control	12 (25.5%)	3 (6.4%)	32 (68.1%)
RESEARCH			
Report Writing	13 (27.7%)	6 (12.8%)	28 (59.5%)
Data Collection	10 (21.3%)	7 (14.9%)	30 (63.8%)
Data Analysis	9 (19.2%)	8 (17.0%)	30 (63.8%)

various administrative, clinical, and research purposes.

Occupational therapists use computers with a variety of diagnostic categories/conditions, as shown in Table 2. The most common conditions are head injury, cerebrovascular accident (CVA), and motor disorders. Twenty-five (53.2%) of the sites use computers with the head-injured population, 18 (38.3%) of the sites use computers with CVA clients, and 15 (34.0%) of the sites use computers with clients who have motor disorders. Ten of these sites use computers with all three diagnostic categories, 13 sites use computers with two of the three categories, and three sites use them with only one of the categories.) Table 3 depicts clinical uses of computers by the OTRs who indicated they use computers with the head- injured, CVA, or motor disorder populations.

Table 2

Diagnostic Categories/Conditions in Which
Computers Are Being Used (n=47)

Head Injury	25	(53.2%)
CVA/Hemiplegia	18	(38.3%)
Motor Disorders	16	(34.0%)
Cerebral Palsy	11	(23.4%)
Degenerative Neuro Disorder	11	(23.4%)
Spinal Cord Injury	11	(23.4%)
Learning Disorder	10	(21.3%)
Vocational Limitation	7	(14.9%)
Hand/Wrist Disorders	6	(12.8%)
Mental Retardation	6	(12.8%)
Burns	4	(8.5%)
Pervasive Developmental Disorder	4	(8.5%)
Affective Disorders	3	(6.4%)
Arthritis	3	(6.4%)
Dysphagia	3	(6.4%)
Amputees	2	(4.3%)
Anxiety Disorder	2	(4.3%)
Fractures & General Orthopedics	2	(4.3%)
Oncology	2	(4.3%)
Schizophrenia	2	(4.3%)
Eating Disorders	1	(2.1%)
AIDS	0	(0.0%)
Cardiac Dysfunction	0	(0.0%)
C.O.P.D.	0	(0.0%)
Neonatology	0	(0.0%)
Substance Abuse	0	(0.0%)

Table 3

Clinical Uses of Computers by OTRs at Fieldwork Sites
Using Computers With Head-Injured, CVA, or
Motor Disorder Populations

	Head Injury (n=25)	CVA (n=18)	Motor Disorders (n=16)
Perceptual/ Motor	23 (92.0%)	17 (94.4%)	14 (87.5%)
Cognitive Training/ Retraining	22 (88.0%)	18 (100.0%)	13 (81.3%)
Recreation/ Games	17 (68.0%)	12 (66.7%)	12 (75.0%)
Communication	13 (52.0%)	10 (55.6%)	10 (62.5%)
Environmental Control	11 (44.0%)	9 (50.0%)	6 (37.5%)
Assessment	11 (44.0%)	10 (55.6%)	7 (43.8%)
Vocational Training/ Retraining	10 (40.0%)	8 (44.4%)	5 (31.3%)

Note. Categories do not total 100%, since sites could use computers for more than one purpose.

DISCUSSION

Word processing is the most common way in which OTRs are using computers, with OTRs at 27 (57.4%) of the sites currently using computers for this task. The most common clinical use of computers is for perceptual/motor assessment and treatment, with 26 (55.3%) of the sites using computers in this way, followed closely by cognitive training/retraining, with 24 (51.1%) of the sites using computers for this clinical purpose. The most common use of computers in occupational therapy research is for report writing, with 13 (27.7%) of the sites using computers in research report writing.

The population with which computers are most frequently used is the head-injured population. Twenty-five (53.2%) of the 47 sites use computers with this population. Eighteen (38.3%) of the sites use computers with CVA clients, while 15 (34.0%) use them with clients who have motor disorders. The most common clinical use of computers with head-injured and motor disorder clients is perceptual/motor assessment and treatment. With CVA clients, the most common clinical use is cognitive training/retraining.

In assessing the extent of computer knowledge of the OTRs at the fieldwork sites surveyed, the survey revealed

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that 26 (55.3%) of the 47 sites employ at least one OTR with three or more years of computer experience. Fifteen (31.9%) of the sites employ at least one OTR who has never used a computer. This suggests that sites are more likely to employ OTRs with three or more years of computer experience than they are to employ OTRs with no computer experience.

The survey also addressed the question of the adequacy of computer knowledge of fieldwork students from Western Michigan University and from other colleges or universities. Only 26 (55.3%) of the 47 survey respondents answered the question that pertained to WMU students, and only 20 (42.6%) responded to the question that pertained to students from other colleges or universities. The low number of sites responding to these questions and the number that indicated that the questions were "not applicable," may suggest that fieldwork students are not asked to use computers, or it may suggest that their skills are not tracked. Of those sites that did respond, however, the most frequent response was that the students' computer knowledge tends to be adequate for the department's needs. None of the respondents indicated that the students' computer knowledge "always exceeds our department's needs." Nor did any of the respondents indicate that the students' computer knowledge "always falls short of our department's needs." There was a nonsignificant difference between the

adequacy of computer knowledge of the Western Michigan University students and the computer knowledge of the students from other colleges or universities.

One site reported owning 20 microcomputers. That site employs 55 OTRs, the most of any site in the survey. Of the 55 OTRs employed by the site, 8 (14.5%) have been using computers for 3 years or longer; 32 (58.2%) for 1-3 years; 10 (18.2%) for 0-1 years; and 5 (9.1%) have never used computers.

This site currently uses computers for the administrative functions of accounting/bookkeeping, word processing, data base/mailing lists, spreadsheets/business projections, graphics, and generating reports. Clinically, the site presently uses computers for environmental control, communication, cognitive training/retraining, assessment, recreation/games, and perceptual/motor assessment and treatment. In the research area, the site presently uses computers for data collection and report writing. Additionally, the site plans to begin using computers for quality assurance and for analysis of research data within 0-12 months.

The site that owns 20 microcomputers uses computers with the following diagnostic categories/conditions: amputees, arthritis, burns, cerebral palsy, CVA/hemiplegia, degenerative neuro disorder, dysphagia, fractures and general orthopedics, hand/wrist disorders, head injury, motor

disorders, and spinal cord injury. While this site is probably not a typical one, it may represent a future trend in the expanding use of computers by occupational therapists.

CONCLUSION

Computer use is very common in the occupational therapy fieldwork sites surveyed, with OTRs at 76.6% of the sites already using computers and an additional 6.4% of the sites planning to begin using computers within the next five years. The range of tasks for which computers are used is broad, as is the diversity of diagnostic categories/conditions with which computers are used. The computer appears to be gaining credibility as an occupational therapy tool.

With computers gaining popularity and widespread use in occupational therapy, it will soon be imperative that occupational therapy curricula offer introductory computer courses. Such courses would benefit occupational therapy students in several ways. They would enable the students to acquire a basic familiarity with the computer as an occupational therapy tool. They would help students attain a higher level of comfort in working with computers. Additionally, students would benefit by learning to use a word processing software package that could subsequently assist them in completing their course assignments while still in college.

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A replication of this study would be valuable and might serve to indicate how occupational therapy computer uses are changing. Future researchers might also conduct a survey of occupational therapy curricula to determine exactly which computer courses are being taught in the various colleges and universities. Another study of interest might focus on the question of whether therapists themselves are initiating computer use or whether therapists are required--perhaps by the administrators at the various facilities--to use computers. Additionally, future researchers could survey OTRs to determine their levels of computer experience and knowledge or to determine what sort of computer training is deemed necessary. Most importantly, research is needed to determine the efficacy of the computer as an occupational therapy tool of practice and to identify the need for skill acquisition prior to entering the field.

Appendices

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Appendix A

Survey

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Occupational Therapy Department

WESTERN MICHIGAN UNIVERSITY

Kalamazoo Michigan 49008-5051
616 387-3850

February 20, 1991

Dear Fieldwork Supervisor:

The attached survey has been sent to your fieldwork center because
you have supervised two or more Western Michigan University
fieldwork students during the past three years.

Martha Guy, for her thesis to meet part of the requirements for a
Master of Science in Occupational Therapy, has developed this
survey to determine:
    (1) how occupational therapists at fieldwork sites are using
         computers, and
    (2) how well prepared Western Michigan University's
         occupational therapy students are to meet the computer
         needs of the fieldwork site.

We anticipate that this research will provide information valuable
to our curriculum, with regard to computer education and training.
Please ask the head of your occupational therapy department to
complete this survey and return it to us by Friday, March 8, 1991.

Results of this survey will be reported as group data. However, if
the respondent is willing to have the survey information included
in the fieldwork manual (which is kept on file at Western Michigan
University and which gives information about individual sites),
there is a place on the top of the survey to sign, giving this
approval. This would allow students preparing for their fieldwork
affiliations to obtain information about the computer uses as well
as modalities at your facility. This signature is completely
optional.

Thank you very much for your cooperation.

Richard G. Cooper, Ed.D., OTR, FAOTA   Claire R. Callan, Ed.S.,OTR
Chairperson   Fieldwork Coordinator

**SURVEY OF COMPUTER USE
IN WESTERN MICHIGAN UNIVERSITY'S
OCCUPATIONAL THERAPY FIELDWORK SITES**

Results of this survey will be reported as group data. However, if you are willing to have this survey placed in the fieldwork manual ·(which is kept on file at Western Michigan University and which gives information about individual sites), please sign below and give the name of your facility and unit. This would allow students preparing for their fieldwork affiliations to obtain information about the methods, activities and computer uses at your facility. Your signature is completely optional.

Signature _____

Name of facility _____

Name of unit (if applicable) _____

DEMOGRAPHIC INFORMATION

1. How many full time OTRs does your occupational therapy department have? _____

2. How many clients did your OTRs serve last year? _____

3. Please check all of the following methods and activities which are provided by your OTRs:

_____ Amputee Training	_____ Minor Crafts
_____ Behavior Modif'n	_____ Muscle Group
_____ Biofeedback	_____ Muscle Testing & ROM
_____ Brunnstrom	_____ NDT
_____ Ceramics	_____ Needlework
_____ Cognitive Eval'n & Training	_____ Pain Management
	_____ Perceptual Test
_____ Coma Stimulation	_____ PreVoc Work Test
_____ Computer Access	_____ PreVoc Work Sample
_____ Cooking	_____ PreVoc On-Job
_____ Daily Living Skills	_____ Projective
	_____ Psychodrama
_____ Design/Fabricate Splints	_____ Rood
	_____ Sensorimotor
_____ Driver Evaluation & Training	_____ SI Evaluation/Training
·	_____ Social Skills
_____ Edema Control	_____ Swimming
_____ Evaluate for Functional Brace	_____ Therapeutic Groups
	_____ Weaving
_____ Fabricate Adaptive Equipment	_____ Woodworking - Hand
	_____ Woodworking - Machine
_____ Gardening	_____ Work Hardening
_____ Group Recreation	_____ Other:_____
_____ Homemaking	_____
_____ Leather	_____

COMPUTER USE

4. Below is a list of computer uses. Please use the following key to mark each category as it applies to your OTRs' present or future computer use:

1 = Presently using a computer(s) for this purpose.
2 = Not using for this purpose, will be within 0-12 months.
3 = Not using for this purpose, will be within 13-24 months.
4 = Not using for this purpose, will be within 25-60 months.
5 = Not using for this purpose, and do not plan to.

ADMINISTRATIVE

_____ Accounting/Bookkeeping
_____ Word Processing
_____ Data Base/Mailing Lists
_____ Spreadsheets/Business Projections
_____ Graphics
_____ Generating Reports
_____ Quality Assurance
_____ Other (Please specify) _____
_____ Other (Please specify) _____
_____ Other (Please specify) _____

CLINICAL

_____ Environmental Control
_____ Communication
_____ Cognitive Training/Retraining
_____ Vocational Training/Retraining
_____ Assessment
_____ Recreation/Games
_____ Perceptual/Motor
_____ Other (Please specify) _____
_____ Other (Please specify) _____
_____ Other (Please specify) _____

RESEARCH

_____ Data Collection
_____ Data Analysis
_____ Report Writing
_____ Other (Please specify) _____
_____ Other (Please specify) _____
_____ Other (Please specify) _____

OTHER USES

Please specify any other areas in which computers are or will be used by your OTRs.

_____
_____
_____

5. If your OTRs are using computers, with which diagnostic categories/conditions are they being used?

_____ Affective Disorders	_____ Hand/Wrist Disorders
_____ AIDS	_____ Head Injury
_____ Amputees	_____ Learning Disorder
_____ Anxiety Disorder	_____ Mental Retardation
_____ Arthritis	_____ Motor Disorders
_____ Burns	_____ Neonatology
_____ Cardiac Dysfunction	_____ Oncology
_____ Cerebral Palsy	_____ Pervasive Developmental
_____ C.O.P.D.	Disorder
_____ CVA/Hemiplegia	_____ Schizophrenia
_____ Degenerative Neuro	_____ Spinal Cord Injury
Disorder	_____ Substance Abuse
_____ Dysphagia	_____ Vocational Limitation
_____ Eating Disorders	_____ Other:_____
_____ Fractures & General	
Orthopedics	_____

COMPUTER HARDWARE/EQUIPMENT

6. Indicate the number of computers in each category owned or leased by your occupational therapy department.

Category of Computer	Own	Lease
Microcomputer	_____	_____
Minicomputer	_____	_____
Mainframe computer	_____	_____

7. List the manufacturer and model of each computer used in your occupational therapy department (e.g. IBM PS-2, Apple IIe, etc.).

Manufacturer	Model
_____	_____
_____	_____
_____	_____
_____	_____

8. What type(s) of peripheral hardware do your OTRs use? (e.g. disk drive, speech synthesizer, printer, switches/controls, etc.)

_____

_____

_____

9. Can the hardware be adapted to meet patient needs? _____

   If yes, how is the hardware adapted? If no, what changes are
   needed? _____
   _____
   _____

10. Do your OTRs desire any adaptive hardware that is not
    commercially available?   _____

   COMPUTER SOFTWARE

11. Please list the software that your department uses, and check the
    column appropriate to its use (A=Administrative, C=Clinical,
    R=Research, O=Other).

   <u>Software</u>   <u>A</u>   <u>C</u>   <u>R</u>   <u>O</u>
   _____ __ __ __ __
   _____ __ __ __ __
   _____ __ __ __ __
   _____ __ __ __ __
   _____ __ __ __ __

   Do the programs meet your department's needs?   _____

   If not, what changes are needed?
   _____
   _____
   _____

12. Does your facility develop any of its own occupational therapy
    software?   _____

   If so, who develops it (e.g. engineer, computer programmer,
   etc.)?
   _____
   _____
   _____

COMPUTER KNOWLEDGE

13. Please indicate the number of OTRs in your department who fall into each of the following categories relative to computer experience.

_____ Have been using computers for 3 years or longer.
_____ Have been using computers for 1-3 years.
_____ Have been using computers for 0-1 years.
_____ Have never used computers.

14. Please indicate the way(s) in which OTRs in each experience category have gained their computer experience. Place a check in each box which applies.

	OTRs who have been using computer:		
	3 years or longer	1-3 years	0-1 years
Classes taken for college credit			
Non-credit college classes taken			
Other commercially available classes taken			
Community education classes taken			
On-the-job training (self-taught)			
On-the-job training (directed)			
Self-taught (not on-the-job)			
Other (please specify)			
Other (please specify)			

15. How would you rate the computer knowledge of the Western Michigan University occupational therapy students who have done their fieldwork in your occupational therapy department? (Check one.)

Computer knowledge of WMU students:

_____ always exceeds our department's needs.
_____ usually exceeds our department's needs.
_____ tends to be adequate for our department's needs.
_____ usually falls short of our department's needs.
_____ always falls short of our department's needs.

_____ Not applicable.

Comments: _____

_____
_____
_____

16. How would you rate the computer knowledge of the occupational therapy students from colleges/universities other than Western Michigan University who have done their fieldwork in your occupational therapy department? (Check one.)

Computer knowledge of non-WMU students:

_____ always exceeds our department's needs.
_____ usually exceeds our department's needs.
_____ tends to be adequate for our department's needs.
_____ usually falls short of our department's needs.
_____ always falls short of our department's needs.

_____ Not applicable.

Comments: _____

_____
_____
_____

You are finished with the questionnaire. Please insert it in the enclosed postage-paid envelope and return it to us by Friday, March 8, 1991.

THANK YOU VERY MUCH FOR COMPLETING THIS QUESTIONNAIRE.

Appendix B

Western Michigan University Human Subjects
Institutional Review Board
Approval Form

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Human Subjects Institutional Review Board

Kalamazoo, Michigan 49008-3899

WESTERN MICHIGAN UNIVERSITY

Date: January 7, 1991

To: Martha E. Guy

From: Mary Anne Bunda, Chair   *Mary Anne Bunda*

Re: HSIRB Project Number: 91-01-02

This letter will serve as confirmation that your research protocol, "A Survey of Computer Use in Occupational Therapy Fieldwork Sites," has been **approved** under the _exempt_ category of review by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

xc.   Doris Smith, Occupational Therapy

Approval Termination: January 7, 1992

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