

ADCIS SIG CBT

NEWSLETTER

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Association for the Development of Computer-Based Instructional Systems Special Interest Group in Computer-Based Training

THE CHAIR'S VIEWPOINT

Robert C. Fratini (This column was received 8 July 1983). There's one thing you can say for my wife Deb—when she promises, she delivers. She promised me a baby during the week of the 24th annual ADCIS Conference in Denver and sure enough, on Wednesday May 11, 4:06 pm, I was there for the delivery of our Number One Son, Thomas Robert. He's almost two months old as I write this and as best I can tell, he is singlehandedly responsible for the current economic recovery. He has spurred the purchase of a larger station wagon, airline tickets, portable video equipment, several cameras, and uncounted rolls of film and reprints from negatives. Tomorrow we have an appointment to see a real estate agent about looking for a house. I expect to receive a letter of commendation on his behalf from President Reagan any day now.

In addition to his trickle-down benefits (to the economy, not the diaper service) he's positively influenced our lives in more ways than I could begin to list here. One way has been the way his presence has affected our abilities to set priorities in our lives. Deb and I had always had some difficulty setting priorities since like most folks we'd like to have a little of everything that life has to offer, without sacrificing anything. Well, Thomas has helped us focus our thinking. We can now see what's really important to us. And what's even better, we don't feel too bad about the items that we have to let go by for now.

As I've discussed the future of the SIG CBT with some of the members, it has

occurred to me that the SIG could stand a little priority setting. We felt like we had a pretty good handle on what our mission was when 30 of us signed a petition in Dallas in 1978 but now there's well over 400 of us. Some of you have made thousands of dollars using hardware and software that didn't even exist in 1978. So as I take office as your Chairperson for another term, I need your help in deciding what it is you want the SIG CBT to do this time around.

Because of our size, we have the budget to address our needs better than most of the other ADCIS SIGs. Dennis Bruna who chaired the Denver SIG Business Meeting on my behalf sought some consensus on SIG priorities from those who were in attendance. Many of you weren't there, however. That's why we're coming up with yet another questionnaire. We had some logistics problems sending out the "Whos Who" survey (created by the presence of the US and Canadian Postal Systems) but we've got our act together this time. And this questionnaire should take you even less time than the "Whos Who". While the results of that survey will benefit you (the members) directly, this one will directly assist your SIG officers in setting the course for the SIG during the next few years. And of course if I do my job well, the SIG will then return the benefit to you.

I intend to do my job well. Like the computer I'm composing this text on, I need data to function productively. Let's see some input from you, the remote users of the SIG CBT "system".

Enough computer analogies. Before I close, I would like to again congratulate John Buck and Barbara Wright of the FAA, winners of the SIG CBT award for the "Best Technical

Paper" award at the Denver Conference and Tim Spannaus, winner for the "Best Technical Presentation".

Deb, Thomas, and I are all looking forward to joining you at the 25th annual ADCIS Conference here in Columbus Ohio. Thomas will be the one using his conference name tag—to keep his diaper pinned.

With an address like Dublin, Ohio, SIG CBT Chairman Robert Fratini could not fail to elicit a response from this new member in Dublin, Ireland.

The Irish Management Institute (IMI) is a membership organization and the largest management centre of its kind in Europe. It organised the first national CBT Conference 'Computer-Based Training "83"' in Dublin on May 4. This was preceded by a survey which shows a small but increasing interest in CBT in Ireland. Although most of the present applications are in DP departments, the next few years should see CBT beginning to be used in management and clerical training in some of the larger organisations, especially those with a large branch structure such as banks. Training organisations, like the IMI, are also interested but are at the feasibility study stage at present.

The 1-day conference integrated seminar and exhibition sessions. The exhibitors included well known names such as PLATO, Phoenix, McGraw-Hill, Bell and Howell, Deltak, and Sony and also some of the new up and coming names such as Mentor II, Combat, Heinemann Educational Courseware, BBC Micro with Microtext, and Irish organisations such as ECAL and UMC.

The main sessions were given by UK lecturer and author Nick Rushby. Exhibitors had the opportunity to make short presentations and after the initial visit to the exhibition there was a discussion on Cost Effectiveness of CBT based on the systems displayed. The conference was brought to a close by a panel discussion with Aodh O'Canainn of IMI, Dermot Walls of Aer Lingus, and Douglas McCullough of the Ulster Polytechnic.

What of the future? Participants see a need for more information and more education. The IMI would like to hear of CBT in Management Development. In a small country like Ireland, writing our own courseware does not appear economical so we are looking at the possibilities of collaboration

with other organisations to produce material for international application.

Any proposals from fellow members would be most welcome.

This article was submitted by Aodh O'Canainn.

The ADCIS SIG CBT Newsletter is published quarterly by the ADCIS Special Interest Group in Computer-Based Training. Its purpose is to encourage the exchange of information on instructional computer applications in business, government, industry, and the military.

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Articles on computer-based training are invited from all members of the training community. Manuscripts should be limited to two double-spaced pages and submitted to the Newsletter Editor.

Any opinions, conclusions, or recommendations expressed in this Newsletter are those of the authors alone. They do not necessarily reflect the views of ADCIS, the SIG CBT, the editor, or the authors' employers.

Requests for reprints and/or further information should be directed to the authors. Requests for membership in ADCIS SIG CBT should be directed to Gordon Hayes, Executive Secretary, Western Washington University, Computer Centre, Bellingham, WA 98225.

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WHOS WHO SURVEY RESULTS

After a long circuitous route, the Survey Results were delivered to my office. At least we discovered why Canada Post rates are higher than U.S. rates. Canada charges for storage whereas storage is free in the U.S. So much for international humor (or humour as they say in Canada).

We decided not to release names or addresses of the 50 respondents (approximately 10% of the membership at the time of the distribution). Business represents 28, non-profit agencies 9, and 13 cited education institutions.

What CBT Authoring Languages Are Being Used?

22 respondents indicated they are using more than one language. The top three languages in use were TUTOR-microTUTOR (21), Pilot-Superpilot (10), and BASIC (8). Each of the following is used by 3 respondents: Phoenix, IIS, CWII or III, EnBasic, and PASCAL. Those languages cited by 2 respondents include Use, EnCore, Wise, and own-under development. (Our best wishes to the latter group). One respondent is using CSF, Unix-based, Ease, IIAS, APT, TAL, RCG, Author I, PXS, CAS, LISP, AIS, PASS, SNAP, FORTH, DECAL, ETC, ASET, and CAMIL. One respondent indicated the use of all CBT languages, two marked 'none', and two did not respond.

What CBT Training Designs Are You Using?

47 of 49 respondents indicated they are using computer assisted training while 35 checked off computer managed training. Simulation was being used by 38 while 12 cited the use of job aids.

Under CBT control of external media, video is big. 19 are using videodisc and 16 are using videotape. Six use slides while 4 use fiche.

Several are using more than one mode. Seventeen cited the use of 4 training modes while 6 cited all 5 modes. Six respondents use one mode, 9 use 2 modes, and 10 use 3 modes

of CBT.

Who are Your Target Populations?

A large diversity of target populations is addressed by our membership. Several train their own corporation employees, while others develop custom courseware. The categories of course, overlap because they were defined by the end users. Nevertheless, the information should be useful.

The largest body of individuals are military (11), business (11), data processors (9), and industry (8). Next came adults (5), managers (5), medical personnel (4), educators (5), public school students, technicians (4), and government employees (4). Maintenance workers and end product users were mentioned twice, and the following were cited once: pilots, installers, training departments, courseware designers, financial service professionals, and fortune 500 companies. Somebody out there thinks big!

What Are Your Major CBT Organizational Goals?

Those goals that come to mind immediately are improved effectiveness (11), efficiency (7), reduced travel (5), needs-oriented training (3), improving cost/effectiveness (4), and systematically designed courseware (5). The remaining goals and number of citations are listed below.

feasibility/evaluation of CBT (3)
research and development (3)
contract work (3)
develop authoring systems (2)
employee upgrading (2)
embedded training (2)
expanded scope of training (2)
curriculum development skills (2)
marketing CBE (2)
training trainees (2)
microcomputers (2)
courseware transportability (2)
pre-lab simulation (2)

consistent training (1)
safety (1)
mediated instruction development (1)

testing (1)
career information (1)
entry level programmer training (1)
experiential learning (1)
robotics training (1)
military readiness (1)
integration of new technology (1)
sales of CBT systems (1)
reduce hands-on time (1)
setting CBE corporate policy (1)

What Are Your CBT Expansion Plans?

Hold on to your hats, vendors. 25 respondents indicated a 75% or better probability of expansion in the next year. Nine will expand to videodisc, 7 into microcomputers, 4 into ICAI, 4 into authoring systems, and the expansion of 3 will be subject to customer contracts.

Two will seek funds to expand, two will expand if courseware development is not too difficult, two will try to convince others of the capability and acceptability of CBT, and two more will try to get some courseware up and running.

Two educational institutions plan to develop graduate programs in CBT. The remaining expansion plans were cited once each: Conversion of 'live' courses, human factors work, and videotape. One reported a curtailment of funds due to the economic recession with optimism that his organization would soon experience a "financial reversal."

Summary

Well there's the data and as Carl Rogers once said, the data is always friendly. I will resist the temptation to summarize further since 1) the sun is setting (it sets around 8 pm here this time of year) and 2) to summarize is to invite prediction and the ultimate warning: "Those who live by the crystal ball are destined to eat crushed glass!"

INFORMATION SOURCES

Editor's Note:

The following information deals with CAI Information Sources and was provided by member Harold F. Rahmlow. It was published in a recent issue of the *National Society for Performance and Instruction Journal* and our thanks to Harold and the Editors of NSPI for permission to reproduce it in the Newsletter.

Associations

ADCIS

The Association for the Development of Computer-Based Instructional Systems is a professional membership organization that publishes both a newsletter and a journal, and holds annual meetings. This association has a special interest group on computer-based training, and this group also publishes a newsletter.

For more information contact:
ADCIS, Computer Center, 409 Miller Hall,
Western Washington University, Bellingham,
Washington 98225

AEDS

The Association for Educational Data Systems is a professional organization that seeks to promote a greater flow of information among educators and educational administrators regarding data and information processing ideas, techniques, materials, and applications. This organization conducts workshops and seminars, and publishes a journal and a monitor.

For more information contact: AEDS,
1201-16th Street N.W., Washington, D.C.
20036

NSPI

The National Society for Performance and Instruction is a professional organization. The purpose of the organization is to advance

education and training through the collection, development, and diffusion of information concerned with the process of developing instructional materials. This organization also holds annual meetings and publishes a journal that contains a special column on CAI.

For more information contact: NSPI, 1126 Sixteenth Street, N.W., Suite 315, Washington, D.C. 20036

Society for Applied Learning Technology

One of the objectives of the Society is to promote and accelerate information transfer concerning learning technology among educators, industrial trainers, system designers, research and development organizations, and government and military training managers.

For more information contact: Society for Applied Learning Technology, 50 Culpepper Street, Warrenton, Virginia 22186

Dictionary

Spencer, Donald D. THE ILLUSTRATED COMPUTER DICTIONARY. Columbus, OH: Charles E. Merrill Publishing Company (a Bell and Howell Company), 1980.

Journals

AEDS JOURNAL published quarterly by the Association for Educational Data Systems, 1201-16th Street N.W., Washington, D.C. 20036.

BRITISH JOURNAL OF EDUCATIONAL TECHNOLOGY published 3 times per year by Council for Educational Technology for the United Kingdom, 3 Devonshire Street, London, W1N 2BA.

COMPUTERS AND EDUCATION: AN INTERNATIONAL JOURNAL published quarterly by Pergamon Press, Inc. Maxwell House, Fairview Park, Elmsford, New York 10523.

JOURNAL OF COMPUTER-BASED INSTRUCTION published quarterly by the Association for the Development of

Computer-Based Instructional Systems (ADCIS), Computer Center, Western Washington University, Bellingham, Washington 98225.

NSPI JOURNAL, published 10 times per year by the National Society for Performance and Instruction (NSPI), 1126 Sixteenth Street N.W., Suite 315, Washington, D.C. 20036.

T.H.E. JOURNAL: TECHNOLOGICAL HORIZONS IN EDUCATION published bimonthly by Information Synergy, P.O.Box 992, Acton, Massachusetts 10720.

Magazines

APPLE EDUCATION NEWS published 3 times per year by Apple Education News, 10260 Bandley Drive, Cupertino, CA 95014. Glenn Polin, Editor. (Free publication)

BYTE published monthly by McGraw-Hill, Box 590, Martinsville, New Jersey 08836. Carl T. Helmers, Editor.

COMPUTE published monthly by Small Systems Services, 625 Fulton Street, Greensboro, North Carolina 27403. Robert Lock, Editor. (Atari, Commodore, and Apple Computers.)

CREATIVE COMPUTING published monthly by AHL Computing, Inc., P.O. Box 789-M, Morristown, New Jersey 07960. Elizabeth Staples, Editor.

EDU: The Education Magazine of Digital Equipment Corporation published 3 times per school year by Education Computer Systems Group, Digital Equipment Corporation MR1-1/M40, 200 Forest Street, Marlboro, Massachusetts 10752. Jane E. Goldman, Editor.

EDUCATIONAL COMPUTER published bimonthly by Dundee Maples, P.O. Box 535, Cupertino, California 95015. Joan Hiraki, Editor.

EDUCATIONAL TECHNOLOGY published monthly by Educational Technology Publications, 140 Sylvan Avenue, Engelwood

Cliffs, New Jersey 07632. Lawrence Lipsitz, Editor.

ELECTRONIC EDUCATION published ten times per year by Electronic Communications, Inc., 1311 Executive Center Drive, Suite 220, Tallahassee, Florida 32301. Sharon Lobello, Editor.

MEDIA METHODS published monthly by North American Publishing Company, 401 N. Broad Street, Philadelphia, Pennsylvania 19108. Laurie Wagman, Editor.

PC: PERSONAL COMPUTING published quarterly by IBM, 1528 Irving Street, San Francisco 94122. Susan Keller, Editor.

PERSPECTIVES IN COMPUTING published by IBM, 44 South Broadway, White Plains, New York 10601. Don Sanders, Editor.

PLATO PASSWORD published quarterly by Control Data Corporation, Educational Systems, HQA02P, P.O. Box 0, Minneapolis, Minnesota 55440.

POPULAR COMPUTING published monthly by Popular Computing (a McGraw-Hill publication), P.O. Box 307, Martinsville, NJ 08836.

THE COMPUTING TEACHER published monthly by the International Council for Computers in Education, Department of Computer Information Services, University of Oregon, Eugene, Oregon 97403. Dick Ricketts and Dave Moursund, Editors.

TRAINING AND EDUCATION FORUM published 3 times per year by the Bell System Training Center for Technical Education, 6200 Route 53, Lisle, Illinois 60532. Marti Sladek, Editor.

TRAINING published monthly by Training, 731 Hennepin Avenue, Minneapolis, Minnesota 55403. Philip Jones, Editor.

"99'er" published monthly by Emerald Valley Publishing Company, P.O. Box 5537, Eugene, Oregon 97405. Gary Kaplan, Editor.

Newspapers

COMPUTERWORLD: The Newsworld for the Computer Community published weekly by CW Communications, Inc., Box 880, 375 Cochituate Road, Framingham, Massachusetts 01701. John C. Whitmarsh, Editor.

DATA TRAINING: The Monthly Newspaper for Information Trainers published monthly by Warren/Weingarten, Inc., 176 Federal Street, Boston, Massachusetts 02110. Judith Hurwitz, Editor.

INFOWORLD: The Newsworld for Microcomputer Users, published weekly by Inforworld, 530 Lytton, Palo Alto, California 94301. John C. Dvorak, Editor.

SOFTWARE NEWS: The Newspaper for Software Decision Makers published monthly by Sentry Database Publishing, division of Technical Publishing Company, (a Dunn and Bradstreet Company), 1301 South Grove Avenue, Barrington, Illinois 60010. Edward Bride, Editor.

Texts

Baker, Frank B. **COMPUTER MANAGED INSTRUCTION: THEORY AND PRACTICE**. Englewood Cliffs, NJ: Educational Technology Publications, 1978.

Bork, Alfred M. **LEARNING WITH COMPUTERS**. Bedford, MA: Digital Press, 1981.

Huntigton, John. **COMPUTER-ASSISTED INSTRUCTION USING BASIC**. Englewood Cliffs, NJ: Educational Technology Publications, 1979.

IBM Corporation. **COMPUTER BASED TRAINING USER GUIDE**. White Plains, NY: IBM Corporation, 1975.

Keller, Fred S. and Sherman, J. Gilmour. **THE KELLER PLAN HANDBOOK**. Reading, MA: W.A. Benjamin, Inc., 1974.

Meredith, Joseph C. **CAI AUTHOR/INSTRUCTOR**. Englewood Cliffs,

NJ: Educational Technology Publications, 1971.

O'Neill, Harold, (Editor).
COMPUTER-BASED INSTRUCTION: A
STATE-OF-THE-ART ASSESSMENT. New
York: Academic Press (a subsidiary of
Harcourt Brace), 1981.

Papert, Seymour. MINDSTORMS:
CHILDREN, COMPUTERS, AND
POWERFUL IDEAS. New York, NY: Basic
Books, Inc., 1980.

Rahmlow, Harold F., Fratini, Robert C., and
Ghesquiere, James R. PLATO. Englewood
Cliffs, NJ: Educational Technology
Publications, 1980.

Sperry, Univac. ASET, CAI
INSTRUCTIONAL TECHNOLOGY TEST.
Frank Blaisbell, Author. Sperry Univac
Computer Systems, Blue Bell, Pennsylvania,
Undated.

Taylor, Robert (Editor). THE COMPUTER
IN THE SCHOOL: TUTOR, TOOL, TUTEE.
New York: Teachers College Press, Columbia
University, 1980.

Other Sources

Academic Computing Directory & Human
Resources Research Organization, 300 North
Washington Street, Alexandria, Virginia 22314.
The directory lists a number of educational
activities. Specific courses are not listed.

CONDUIT, P.O. Box 388, Iowa City, Iowa
52240. CONDUIT is located at the University
of Iowa. Its primary activity is acting as a
source of reviewed and tested instructional
materials. The majority of topics relate to
academic subjects. CONDUIT publishes a
newspaper titled *Pipeline*. Single copies of
Pipeline are distributed free.

ENTELEK, Inc., 42 Pleasant Street,
Newburyport, Massachusetts 01950.
ENTELEK publishes abstracts and reports,
and presents workshops. The organization is
academically oriented.

IDEAS (Index and Description of Educational
Application Software), Digital Equipment
Corporation. For more information contact
your local Digital Equipment Corporation
representative.

Index to Computer-Based Learning,
Instruction Media Laboratory, University of
Wisconsin, Milwaukee, P.O. Box 413,
Milwaukee, Wisconsin 53201. The 1980 edition
of the Index contains over 3,000 entries. The
materials are organized by a number of
categories including subject, field, source, and
programming language. The index is edited by
Anastasia C. Wang.

TRAINING MARKETPLACE DIRECTORY,
an annual publication of *Training Magazine*,
Lakewood Publications, Minneapolis,
Minnesota. This is a guide to training
programs, services, and materials.

Editor's Note #2:

Your editor would like to add two
organizations of importance to this list.
Although they do not exclusively focus on
Computer Based Training, they both have
active membership interest in the topic.

ASTD

The American Society for Training and
Development is a large professional society of
academic, business, and industrial trainers. In
addition to many services offered to members,
ASTD publishes a monthly journal called
Training and Development Journal. Their
mailing address is:

ASTD Headquarters
Suite 305
600 Maryland Ave. S.W.
Washington, DC 20024

AECT

The Association for Educational
Communications and Technology is a large
professional association with strong ties to
academic education. Heavy in research and
application, AECT publishes a quarterly
journal entitled *Educational Communication and
Technology Journal*. Mailing address:

AECT
1126 Sixteenth St. N.W.
Washington, DC 20036

THE PRODUCTIVITY CHALLENGE: BUSINESS/EDUCATION PARTNERSHIPS

by Kenneth F. Huddleston and Dorothy Fenwick

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Productivity is a central issue these days in any discussion about the economy. However, there is much more talk about productivity than there is real knowledge. Few terms have had so many different interpretations and yet have been used as though a precise definition existed.

We need a clear understanding of the seriousness of the productivity issue. What direction will productivity improvement efforts take? What efforts are required to retrain the existing work force? What is the anticipated magnitude of that training? What cost-effective strategies exist to meet training needs on a massive scale in a short period of time?

In brief, we seem to be well exposed to the fact that productivity levels generally experienced modest increases throughout the nineteenth century and leveled off to around 2.4 percent annually following World War II. Beginning in 1966, though, there was a disturbing deceleration in productivity growth, which fell to an average of 0.8 percent between 1973 and 1978. Since 1978, productivity levels have continued to decrease annually.¹ (See Figure 1.)

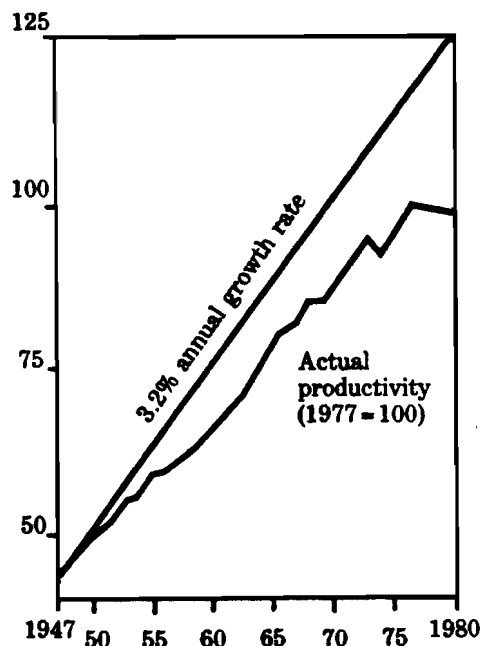
At the end of World War II, the level of American productivity was almost double that of the United Kingdom and France, three times the level of Germany and Italy and seven times that of Japan. By 1973, Canada, the Netherlands, Sweden, Belgium and France reached at least three-quarters of the United States' level of output per hour. Japan and West Germany's productivity levels were more than twice ours, especially in manufacturing. Soon, the overall productivity level of the United States will be surpassed by foreign countries with smaller work forces and other

resources. This is a fundamental change, not merely a cyclical slowdown. Unfortunately, the causes are not clearly understood, nor are the actions needed to reverse the trend understood.²

Lagging productivity and the economy

In the short run, lagging productivity increases inflation, unemployment and underemployment. It increases our standard of living and confounds our ability to compete successfully in world markets. Long-term effects include social and political unrest, reduced national defense capabilities and snowballing economic problems.

Figure 1.
Output Per Hour of All Persons
Employed in Private Business Sector (1947-80)



Source: American Productivity Center, Houston, Texas, 1981.

Inflation is a good example of the relationship between productivity and the economy. Some estimates are that for every one percent drop in annual productivity, a two to four percent increase in inflation can be expected over a four-year period. During a

period of low or zero gains in productivity, wage and benefit gains are paid through increased prices in goods or services. Wage gains contribute to an inflationary spiral because they are not based on gains in productivity.

Lagging productivity directly affects employment rates as well. In selected U.S. industries, lagging productivity provides competing foreign countries with an edge in world markets, reducing the U.S. market share, which in turn means layoffs. More frightening is the contention that to reduce inflation by one percent, we must throw one million people out of work for three years, adding more than \$25 billion to the national deficit.

Lagging productivity has brought a steady reduction in the standard of living for most Americans. The United States now ranks fifth in standard of living compared with other countries, a drop from first place in 1972.

There are long term effects to lagging productivity as well: social and political disruption; reversal of the gains of the poor and minorities in terms of education access, improved standards of living, jobs and career mobility; and weakening of our national defense. Simply stated, during difficult economic times, the monetary resources are not available to support national defense programs at necessary levels.

The future impact on HRD

The serious consequences of lagging productivity on the economy have driven an intense national effort to identify its causes and solutions. Most productivity efforts and economists concur that a massive "shoring up" of our industrial base is needed, including a massive investment in technological and human capital. Estimates are that between 20 and 80 million American workers will be affected. This means that from 20 to 80 percent of the workers at the average company will need retraining.

Investment in new technology will cause skill shortages. Equally important is investment in human capital. Human capital investment strategies and technological investment will mean retaining workers, supervisors, and mid-management at a level

unparalleled in our history

A strategy for meeting the HRD needs

Given limited HRD staff and budgets, business will need to find innovative methods of meeting training needs. Community-technical colleges may be part of the answer. They have highly qualified technical staffs, extensive curricula, a wide range of delivery methods and a willingness to work hand in hand with business. More and more, business and local community-technical colleges are forming partnerships designed to help business meet its need for retraining the existing work force. These partnerships are repeatedly proving cost effective.

There is a great potential for business to meet a significant portion of its training needs by contracting for training services from local community-technical colleges. Nationally, and at the local level, ASTD has been meeting with representatives of the American Association of Community and Junior Colleges and the American Vocational Association to strengthen the understanding of businesses' retraining needs and how businesses and schools can collaborate to meet those needs.

Realizing the magnitude of businesses' future training needs, many community-technical colleges are making an all-out effort to strengthen those relationships. Partnership possibilities include: customized training, industrial testing, career development programs, quality circle training, training needs analysis and state-of-the-art seminars. The following examples demonstrate the kinds of services for which businesses are contracting with schools.

Proven partnerships

In 1982, the American Council on Education (ACE) conducted a survey that found many colleges and universities working with business and industry in joint ventures. The major types of cooperative arrangements identified are: employee education and training; use of personnel; use of facilities; research and development; and cooperative education.

The survey also indicated that the rate of growth of these collaborative arrangements

is increasing significantly. During 1981, more programs between education and industry were established than during the previous five years (1975-1980), and the statistics for the first quarter of 1982 indicated a similar trend.

The Directory on Joint Ventures:

Education and Business Prospering Together, scheduled for publication this spring by MacMillan and Company, highlights the wide spectrum of programs revealing post-secondary institutions as potential training resources. The institutions are effective for company-specific training as well as the more generic education and training courses.

Employee education and training

The following examples demonstrate the kinds of services for which businesses are contracting with schools:

- The Hewlett-Packard Company and Palomar Community College conduct a program in general electronic technology and microelectronics technology. The 12- to 18-month, on-site program enrolls 400 technicians. The company contributes approximately \$150,000 annually and the institution, \$27,500.
- The Montana Power Company uses the resources of Miles Community College to train entry-level personnel for their coal-fires electrical generation facilities. The cost to train 40 employees per year is more than \$145,000. The company reimburses the college for up to \$100,000 of total costs.
- In a more traditional program, the University of Cincinnati provided training resources to Proctor and Gamble to train Japanese employees in language and acculturation to American business practices. Again the company provides the the majority of funding, more than \$100,000 for this service.
- The state of Massachusetts contributed to a pilot program later adopted by Honeywell Information Systems, Inc. and Regis College of Weston, Mass. The 30-week program provides entry-level computer programming skills to 35 adults from other professional

fields. The state contributed \$50,000 as seed money, while Honeywell contributed \$120,700 and Regis College \$12,000.

- Scarce professional resources and the high cost of advanced education prompted Fairchild Industries to provide outstanding University of Maryland electrical engineering graduates with work and study opportunities. The graduates could study two days a week in a post-graduate degree program and work the remaining three days at Fairchild with full salary. Currently, 30 masters candidates and nine doctoral candidates in electrical engineering are in the program, with Fairchild assuming the total cost of \$240,000.

A 1981 study by Mt. Bell/At&T on the impact of tuition reimbursement as it relates to employee retention found that those employees who completed their degrees while employed at a company were more than three times as likely to remain with the company for a significant period of time.

Research and development

Higher education has traditionally played a major role in research and development. Now, in an attempt to find solutions to productivity problems, companies are requesting research indicating specific outcomes, as well.

Educational institutions can be used as a resource to assess company in-house training effectiveness. Vanderbilt University's Institute for the Advanced Study of Corporate Learning Environments has contracted with the First National Bank of Chicago to assess the impact of its corporate learning environments on company productivity. A similar study on the evaluation of worker attitudes was conducted recently by the State University College at Buffalo for Exolon Company. The four-month study included 29 managers and supervisors and cost the company \$3,400. The institution contributed \$1,900 to the effort.

Exchange of personnel

Administrators from educational institutions have found their business campus programs profitable in more ways than one. Perhaps the most significant resource is the trained

business employee. While the use of trained personnel from business and industry is not yet as prevalent in post-secondary education, the programs now in progress have met with unanimous success. Two examples illustrate creative use of this human resource potential.

Work force shortages in the chemistry department of Drew University, New Jersey have been alleviated by the contributed work of senior Exxon executives who, with early retirement, joined the university staff. They are provided with space and support services at the university in return for their assistance in directing undergraduate research. Not only do the undergraduates benefit from this individual attention, but their perceptions of industry have changed because of the interaction with the Exxon representatives.

A unique example of business using the expertise of education is demonstrated in the Sunrise Semester series sponsored by Henry Ford Community College. The seminar, a crash course on techniques for small business management, is provided to shopkeepers working in local retail malls. The information and techniques acquired by the shop owners during the four sessions has increased their efficiency and enhanced total mall effectiveness. The \$1,200 seminar cost is absorbed by the mall management.

Cooperative education

There are many examples of cooperative education between business and educational institutions. Cooperative arrangements between hospitals and teaching institutions are the most common. One example of a joint venture between colleges and industry is that of the University of Illinois and 20 Chicago-based companies. Here, undergraduate business and MBA students are provided with management-related experiences and valuable contacts for future employment.

Bowling Green State University, Ohio placed some of its students with the Social Security Administration to familiarize them with the needs of the public sector. A federal grant paid 37 percent of total costs, while the institution was responsible for the remaining 63 percent.

Use of facilities

The rapidly changing state of the art in many areas, particularly high technology, has led to cooperative arrangements on the use of facilities and equipment. Triton College in River Grove, Illinois built a facility to specifications for the Society of Die Casting Engineers (SDCE). They then leased it back to the Society. The college uses the facility at no cost to conduct die casting classes and seminars. SDCE uses the college staff and support services for their specific training needs. The Society pays \$43,200 under the lease agreement.

Worcester Polytechnic Institute has spent \$62,777 and Computervision \$75,000 to familiarize employees of Computervision, community leaders, business executives and others with robotics capability within the Institute. A pilot test of a number of courses designed to increase general productivity is also part of the joint venture.

Effective business-education cooperation

The recent report by the American Council on Policy Analysis and Research, "The National Investment in Higher Education - 1982," supports the contention that the "developed abilities of a nation's population are fundamental to its economic growth and well-being." However, it also notes that retrenchment in higher education has led to a "siege" mentality among faculty. Within this climate, the necessary risk-taking is not as likely to occur. It is evident that changes and adaptations of current status must occur within higher education. The report emphasizes "urgency of retraining the work force; focusing on undergraduate, graduate and professional education; and scientific and technical research."³

It is generally agreed that education, particularly higher education, has had a profound influence on the economic growth of the United States. Obviously, the rise in the educational level has contributed to that economic growth. However, adequate measurement strategies to document that impact have not yet been developed. At the annual meeting of the American Economics Association in Washington, D.C., panelists

urged that attention be directed to the measurement and description of the "direct and indirect ways in which investment in education contributes to overall economic growth."⁴

In addition to this "measurement gap" there also exists a significant "knowledge gap." How do these collaborative programs, which directly contribute to worker efficiency, increase productivity? The 1982 ACE survey proved that program data are scattered, less comprehensive and often inaccurate. The study concluded that higher education has the capacity and resources to respond to industry needs, but often lacks the understanding of how to implement the response. No overall policy exist, in either the public or private sector, that provides direction, and much less leadership, for effective business-education collaboration.

A common concern, voiced by both educators and business leaders, is that unless coherent leadership is forthcoming, industry and education will each go its separate way. These parallel systems will result in the duplication of services with limited resources stretched to cover overlapping areas of interest. Whether higher education and business and industry will look to more productive means of educating the work force of the 1990s is still a very real question.

References

1. Bolina, A. Productivity: Vocational education's role. *Information Series no. 223*. Columbus, Ohio: The National Center for Research in Vocational Education. The Ohio State University, January 1981.
2. Haggerty, P. Technology, people and productivity. In J. Hogan and A. Craig (Eds.) *Dimensions of productivity research*. Houston: The American Productivity Center, 1980.
3. National Association of College and University Business Officers. *Business Officer*, January 1983, 3.
4. Scully, M.G. Economists call for tools to measure education's role in growth. *Chronicle of Higher Education*, January 5, 1983, 9.

THE EDITOR'S BYTE

Michael Szabo

Shaken Mailboxes? My apologies to those who have done indecent things to their mailboxes wondering where their newsletter issues have gone (also apologies to the mailboxes). They were done in by a combination of overwork on my part and lack of submissions of information on your part. This issue, in one fell swoop, gets us back on track by including issues 5(3) through 6(4) and includes 3 (count 'em) three articles. The next issue should be 7(1) and dated July 1984.

Elsewhere in this issue is an old version of the VIEWPOINT received shortly after the birth of Bob Fratini's son. The kid must be in Junior High by now.

Whos Who Results

You will also find the results of the Whos Who Survey. I think the information is interesting and useful. Were we to repeat it today, we would most certainly ask how many people are using programmerless authoring systems for CBT production. By the way, how many of you are using programmerless authoring systems for CBT production?

Membership Survey: Goals of SIB CBT

Speaking of surveys, your officers have devised another. If all goes well and I sneak this through customs successfully, the survey will be attached to the end of this Newsletter. Please read, thoughtfully complete, and mail it at your earliest convenience.

If you received a copy of this Newsletter at the Conference, be informed that you'll also receive a copy in the mail in the next few weeks. If your first copy came in the mail, ignore the previous statement.

Request for Information: Quality Standards for CBT Materials

SIG CBT has had a request for information which may be available on quality standards

which can be applied in developing material for CBT or CBT-related presentation. The request comes from Gary A. Lyon, CBT Administrator with Satellite Business Systems. If you have access to such materials and are willing to give, sell or trade, please contact Gary directly at:

Mr. Gary A. Lyon, CBT Administrator
Satellite Business Systems
8283 Greensboro Drive
McLean, VA 22102
703/442-6366

Request for Information: PC Courseware for DP

A new member is seeking recommendations on good courseware that runs on the IBM PC or mainframe and teaches data processing skills. He is currently interested in courseware on MVS/JCL, TSO/SPF, COBOL, JES 2, CICS/VS, IMS/VS, etc.

He also needs a computer literacy or data processing concepts course. He is already familiar with vendor offerings available from IBM, Deltak, ASI, and CSR but would also like feedback on their courses.

If anyone has any information, please call John Cooper, the EDP Training Coordinator at Suburban Bank in Maryland. He would also like assistance on how to evaluate CBT courses and recognize good instructional design. John can be reached at:

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