

JAMES A. GRAASKAMP COLLECTION OF TEACHING MATERIALS

VII. INDUSTRY EDUCATIONAL COURSES - LONG TERM

A. EDUCARE

2. General Information and Promotional
Correspondence about the EDUCARE Program

EDUCARE: INQUIRY AND RESPONSE

Professor H. R. Knitter
Professor J. A. Graaskamp

What is EDUCARE?

EDUCARE is a nonprofit corporation created to be an educational joint venture of the American Society of Real Estate Counselors, the Society of Real Estate Appraisers, and the American Institute of Real Estate Appraisers. The Board of Directors of EDUCARE consists of two representatives from each of the professional groups and is structured as follows:

John Schneider, President, 2nd 1-year term, Atlanta, Georgia

Roy R. Fisher, Jr., Vice President, 2nd 1-year term, Davenport, Ia.

Norman Benedict, Treasurer, 1st term, Hamden, Connecticut

William E. Coyle, Jr., Pawtucket, Rhode Island

Robert A. Steele, Los Angeles, California

Norbert Stefaniak, Milwaukee, Wisconsin

For the present EDUCARE has contracted with Professors Robert Knitter and James Graaskamp to develop and operate EDUCARE Course I with the cooperation of the University of Wisconsin Extension program. In addition the EDUCARE Corporation wholly owns a subsidiary corporation EDUCARE Computer Network, Inc. to supply continuing program services and assistance for the ongoing education of professionals who have taken Course I. Each of the sponsoring organizations initially advanced \$10,000 as a loan to EDUCARE. EDUCARE is a non-profit, tax exempt, educational foundation eligible to receive tax deductible gifts.

Where did you find the name?

The name is an acronym for the Educational Foundation for Computer Applications to the Real Estate Industry, Incorporated. The title seemed like a good idea to somebody at the time but it soon became apparent when answering the telephone, that there were more efficient logos. Thus the abbreviation EDUCARE appeared. As an alternative we thought of CANDU.

Who needs it?

Certainly not the national CPA firms which all offer their clients real estate investment valuation models. Nor do investment bankers who operate in real estate finance using computerized cash flow models and statistical systems which have been used in capital budgeting for industry for many years. Civil Engineering firms have been using sophisticated models for economic cost-benefit studies for a long time. Today it is the former client of the appraiser who wants these services and who are discovering which professions offer contemporary methods. Only the appraisal fraternity may lose out as others supply the needs of the market.

So what does EDUCARE Course I do for the appraiser?

Computer power simply places comprehensive information and data processing methods in the appraisal office with a quality and at a cost which is overwhelmingly in favor of the appraiser. On the first day Course I teaches the student to sign on and off the system via telephone handy time-sharing system, and to access the library of programs freely available on the General Electric Mark-II System

virtually anywhere in the United States. On the second day the program proceeds to teach both statistics and terminal use of statistical programming, not to mention the process of building property sales files for use of networks automated market comparison system. The terminal makes it possible for the appraiser to use techniques he has always understood but has feared to try lest his mathematics betray him in the process. EDUCARE presumes everyone had high school algebra and forgot it. On the third day EDUCARE teaches both modern capital budget theory and the use of internal rate of return programs, cash flow investment programs, and a valuation program designed for appraisers by Mack Hodges and Thomas Prince. On the fourth day EDUCARE introduces several sophisticated services for real estate analysis such as Realmetrics and Omnimetrics. In the afternoon the student is introduced to current developments in cost estimating, property management accounting, aerial photography, and model building which will revolutionize the information base and forecasting techniques of real estate decision making. On the fifth and last day of the program the dollar costs of terminal rental and usage are presented together with discussion of equipment choices, the appropriate application of electronic calculators, the services of Network, and new developments in hardware which will further reduce the cost and expand the applications of time-sharing techniques in the next few years.

Must one be a "programmer" to attend or appreciate EDUCARE?

Good Lord, no! It is unnecessary to know programming to use a terminal to advantage, just as you needn't understand circuitry to use a television set, or even build a television set with a kit, for that matter. It would be impossible to learn programming and systems design in five days and if you did you would then have a technical trade which pays far less per hour than you probably earn as an appraiser. Thus there is no motivation and no intent that Course I will in any way prepare its attendees to become programmers.

Will I be taught nothing but computer stuff?

Most of the quantitative analysis which appraisers currently use could be done on an old envelope or table cloth. Within thirty minutes of the start of class on Sunday night, the course student will be doing Ellwood complete with the J factor and more points for the Ellwood chart than he may be prepared to graph. Thus Course I finds it necessary to introduce modern theory of capital finance before introducing cash flow models. It is equally necessary to demonstrate statistical theory, information processing, and other subjects before demonstrating quick and easy ways of executing these techniques. Since the computer time-sharing terminal removes the computational constraint under which appraisers labor, it also expands the number of techniques appropriate to processing real estate and valuation questions.

Why is Course I so expensive?

\$475 for a one week course is higher than any other course normally offered by real estate societies. First, it should be remembered that

this includes room and board, but the real problem is the cost of technical support. First there is at least one teletype and one telephone link for every two students and computer time for each student will cost EDUCARE approximately \$100 despite the educational discounts provided by the General Electric Company for the program. In addition to Knitter and Graaskamp, who have been contributing their services at a fraction of their usual consulting rate, there is an additional staff of graduate students in computer science and real estate to serve as instructors for all lab periods. The cash breakeven point approaches twenty five students for each of the three remaining courses for 1972. These costs compare to charges averaging \$100 per day per student for courses offered by other management associations exclusive of room and board and generally providing no real "hands-on" time. In order to evaluate the cost of attending such a course any professional must add to tuition cost the opportunity cost of his lost income during his week away from the office and transportation. Using the capital budgeting viewpoint this must then be compared to the present value of the expected incremental income attributed to his increase in capabilities as a result of the education. At the very least take the present value of the income retained from encroachment by your competitors.

Why is it offered only in Madison, Wisconsin and not in other locations?

There are significant set up costs with a program such as this, particularly the use of multiple rented terminals on terms which makes it extremely desirable to offer repeated courses in one location.

Remote computer access requires telephone facilities and these can usually be obtained most inexpensively under the educational facilities available through major universities such as the University of Wisconsin. In addition the extensive use of trained lab assistants requires an abundant supply of individuals with unique capabilities, who work cheap, such as graduate students. Furthermore, it is difficult to find comparable costs for the physical facilities and board available at UW Lowell Hall. There is a hope that the future courses will be taught by former students of this course in their home territory as they become increasingly familiar with the use of the techniques and the devices involved and are willing to serve as an expanding teaching cadre. However, one disadvantage of a road show which offers its instructional resources to individuals in their own town is that it is extremely difficult for a professional to stay out of the office and away from the telephone all day for an entire week.

What do I do for help after Course I?

Computer time-sharing services are available throughout the country and anyone who has the necessary interest can become a customer of General Electric Time-Sharing, Service Bureau Corporation, Tyme-Sharing, Inc, or a host of other computer time-sharing vendors. Furthermore, several program authors are making real estate investment analysis programs available through one or more of these time-sharing services. Most significantly we feel the programs which are unique to real estate and form a substantial part of the instructional

material of the EDUCARE course are available through a newly formed subsidiary of the EDUCARE Foundation called the EDUCARE Computer Network, Inc. An attendee at an EDUCARE course can sign up for the services of EDUCARE Computer Network and obtain access to all of these programs plus all of those currently available under G.E. Mark II. These services are currently available only to Course I attendees. Direct cost of using G.E. services through the EDUCARE Computer Network is exactly the same as the charges of G.E. Individual customers of General Electric, however, are required to accrue charges in access of \$100 per month or pay a monthly minimum of \$100 per month. Since EDUCARE Computer Network is the customer of General Electric it is exposed to \$100 minimum but does not require any specific minimum for computer services from its customers. There is a charge for access to the EDUCARE Library programs and there is currently a minimum library charge of \$10 per month. The Network system offers a number of programs which are typically used by appraisal offices but not always available from other vendors. For example there is the complete Ellwood model. There are several cash flow models, a market comparison model, some basic statistical and linear regression models and others that will be developed as people from EDUCARE go back to their offices and find out what best fits their purposes and how best it might be designed and formatted. The most significant contribution of an on-line time-sharing system to the real estate industry may be the fact that it is a continuously changing and dynamic entity. As new concepts are implemented in terms of models they will become available on this network and offer new

potential for use to all the subscribers of the network. It should also be noted that programs are often prepared in conversational format so that the user need only have the most limited previous experience in the use of either the terminal or time-sharing network. Such programs guide him through the need for data and provide him with an interactive programmed learning tool to become familiar with not only the device and the program but also the mathematical concepts and minimum procedural requirements to pursue sophisticated computational or mathematical analysis. A good example is the Ellwood program available under the EDUCARE Computer Network which require little previous training in either the use of Ellwood tables or in the equations which underlie the Ellwood method of evaluation. Instead the user may call for explanation of confusing terms by pressing a question mark on the keyboard. The program provides options for use of the J factor, for proof of the valuation, or for all the points required in executing an Ellwood graph of yield assuming alternative resale prices. Note that the terminal solves the problem of interfacing for the appraiser who is uncertain of his mathematical ability with a process which represents a progressive technique for his art. This potential is equally true for statistics, investment analysis, or economic forecasting.

When are Course I seminars scheduled at Wisconsin for 1972?

July 16-21, 1972

July 30-August 4, 1972

September 24-29, 1972

How do I apply?

To be eligible a registrant must have either an SRA, MAI, or CRE professional designation or be sponsored by an employer who is certified.

Write for application forms to:

Mr. Frederico Roberto
School of Business
University of Wisconsin
1155 Observatory Drive
Madison, Wisconsin 53706

EDUCARE

educational foundation for computer applications in the real estate industry, inc.

October 30, 1970

The Board of Directors of EDUCARE invite you to participate as a student and critic in the first pilot offering of a new course:

COMPUTER APPLICATIONS IN REAL ESTATE ANALYSIS

Date: Sunday Evening, November 29
through Friday noon, December 4

Place: Lowell Center, University of Wisconsin Campus
Madison, Wisconsin.

WHAT IS EDUCARE?

On March 15, 1970 the American Institute of Real Estate Appraisers (MAI), and the Society of Real Estate Appraisers (SRA) together with the Society of Real Estate Counselors (CRE) initiated their first joint educational program under the name of Educational Foundation for Computer Applications in the Real Estate Industry, Inc., which thankfully is known as EDUCARE. The Board of Directors consists of Mr. John Schneider of Atlanta, Georgia, President, Mr. Howard Benedict of New Haven, Connecticut, Vice President and Treasurer, and Mr. Roy Fisher of Davenport, Iowa, Secretary.

WHAT IS THE SEMINAR ALL ABOUT?

The first project undertaken by the Foundation was to commission the development of a basic concepts course which in four days would accomplish the following:

1. Prepare leaders in the real estate industry to make decisions in matters of professional policy and business practice which will anticipate and utilize computer technology.
2. Dispel the awe and mystery of hardware, software, and programming concepts which divert discussion from the useful purposes of the computer for the industry today and from the ease and economy with which computers can be used by the layman.
3. Provide each participant with an introduction to available computer services with ample opportunity to apply alternatives to controlled problem situations under the guidance of the teaching faculty.

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November 6, 1970

Dear Friend:

Relative to your recent invitation to EDUCARE we absent-minded professors omitted a few items which might be of interest to you or might further your opportunities while on campus.

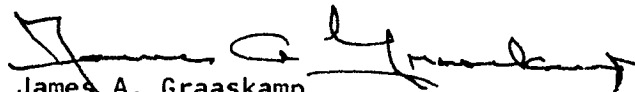
First we should point out that the Advisory Board of EDUCARE includes several key men from your industry, specifically Pete Ellwood and Jim Gibbons and their names were inadvertently omitted on the information sheet.

Then we want to urge you to bring a current problem from your office with all the relevant details as you will have an opportunity to work on that problem via the computer terminal.

Third you might drop us a note in care of Room 101, School of Business, University of Wisconsin, Madison, Wisconsin 53706 indicating your flight and time of arrival on November 28 or 29 so that we can meet your plane and arrange for a Sunday supper and talk session.

We at the University are looking forward to hosting such a distinguished assembly and again these matters are being expedited by Fred Roberto, a former army colonel whom many of you met when you were on campus last year. If you have any special requirements, please let us know. You will not need a car on campus but we will be happy to schedule special transportation needs you might have.

Sincerely yours,



James A. Graaskamp
Associate Professor in Business

December 9, 1970

IMPORTANT NOTICE:

The Board of Directors of EDUCARE has rescheduled the first pilot offering of EDUCARE to avoid schedule conflicts for several key professionals and therefore once again invite selected members of the participating organizations to serve as student and critic of:

COMPUTER APPLICATIONS IN REAL ESTATE ANALYSIS

Date: Sunday evening, February 21
through Friday noon, February 26

Place: Lowell Center, University of Wisconsin Campus
Madison, Wisconsin

INSTRUCTIONS:

The course program is the same as that reported to you in the letter of October 30, 1970. Those who previously registered will be receiving a refund check and their reservations have not been automatically rescheduled. Therefore, please indicate your registration by returning the enclosed reservation card to Lowell Center and the enclosed stamped envelope to Professor Graaskamp with your tuition check and information as to your flight number and time of arrival on Sunday, February 21. Parking spaces can be reserved if you are driving.

INFORMATION:

On Sunday evening we will have an informal smorgasboard supper at one of Madison's better supper clubs but thereafter you will be located at Lowell Center with class sessions all day and into the evening. Thus you will not need a car on campus but any special transportation needs you may have will be provided for by Fred Roberto, our seminar coordinator. Please discourage your office from paging you during class. Your room will have its own extension which will indicate telephone messages at the desk and the switchboard operator will note your incoming calls. The number of Lowell Center is 608-256-2621.

TUITION REMINDER:

For the pilot offering of this basic course, the officers of the American Institute of Real Estate Appraisers, the Society of Real Estate Appraisers, and the Society of Real Estate Counselors named those professionals with responsibility for education and a demonstrated curiosity about the potential role of computers to be asked to assist in the testing and refinement of a rich and unique adult education effort. Therefore, while tuition for future offerings is anticipated to be \$325 including room and board, you are invited to participate for room and board costs of \$100, covering a private single room and 3 meals a day at Lowell Center from Sunday evening, the 21st, through Friday noon, February 26, 1970. Make \$100 check payable to EDUCARE, Inc. and include with your reservation form. Only the first 30 reservations can be accepted and everyone in EDUCARE is looking forward to having your participation and critical evaluation.

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educational foundation for computer applications
in the real estate industry, inc.

Volume 1, Number 1

Hello again to all those of you who took part in EDUCARE, Course 1. As promised at the end of that course this is the first of a possible series of communications with those who have gone through the "experience." We still maintain that those of us who planned and presented the course learned much more than those of you nominally designated as students.

At the end of your week with us, several of you expressed an interest in becoming users of a time-sharing system. In order to accommodate this interest we are negotiating to make EDUCARE (Educational Foundation for Computer Applications to the Real Estate Industry, Inc.) a customer of the General Electric time-sharing network. When all the preliminary work is complete, EDUCARE will provide for you a very convenient way of accessing time-sharing services with a minimum fixed cost. In the future this request will be anticipated and we will be able to provide for such plans on the part of students immediately. In the interim those of you who are interested in becoming G.E. time-sharing users can arrange for temporary access to the network system via the authorizations already being used by EDUCARE.

Those of you interested in such access may contact Bob Knitter (608-262-3816) who will provide you with the user number and password required. We're told that by summer all G.E. time-sharing services will be on a nationwide basis and that several other technical changes are being made in their system which will make it all the more convenient and useful for EDUCARE users.

Several items are enclosed:

1. A manual for the MDS Management System.
2. A reprint on time-sharing applications.
3. A roster.
4. Invitations to summer sessions of EDUCARE (Yes, you are welcome back at full tuition fees)

An interesting article on time-sharing services appeared in a recent data processing news magazine. For those of you interested, it will provide some further insight into the problems and potential of time-sharing networks.

At long last you will also find enclosed a reasonably complete roster of the attendees at the recent EDUCARE conference. We've found that it's wise to use the phone numbers with care; some were incorrect and have been corrected; in some cases the phone numbers are for home phones.

If any of you would choose to send corrections to this list, I would be pleased to record them and make them available to those who request a revised copy.

As before, we continue to solicit any comments you would choose to send us concerning future courses and ways in which we might assist you with your problems in dealing with computers in general. No formal mechanism has been set up to provide you with a complete catalog of programs ready to run on a time-sharing service. However, we would appreciate it if you would direct to us your inquiries or needs regarding problems within your business which you feel are amenable to computer solutions. We have several reasons for making this request. First, if computer programs are available to solve these problems, we would like to make you aware of them. Second, we can incorporate instructional material based on these problems into future offerings of our course, and third, we will continue to consider developing programs for the use of the real estate industry via this or other cooperative time-sharing based efforts.

In closing we'd appreciate your comments on the desirability of continuing publication of an informal newsletter.

H. Robert Knitter

James A. Graaskamp

April 1, 1971

In recognition of your continuing interest in professional education the Board of Directors of EDUCARE invite you to participate as a student in a new education program, a full four day course:

COMPUTER APPLICATIONS FOR REAL ESTATE ANALYSIS

EDUCARE COURSE #1:

Sunday Evening, July 18 through Thursday Afternoon, July 22, 1971

EDUCARE COURSE #1: (REPEAT)

Sunday Evening, August 1 through Thursday Afternoon, August 5, 1971

LOCATION:

Lowell Center, University of Wisconsin Campus, 610 Langdon Street
Madison, Wisconsin 53706

STAFF:

Professor H. Robert Knitter, U.W. School of Business Computer Center
Professor James A. Graaskamp, U.W. School of Business

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2. Dispel the awe and mystery of hardware, software, and programming concepts which divert discussion from the useful purposes of the computer for the industry today and from the ease and economy with which computers can be used by the layman.
3. Provide each participant with an introduction to available computer services with ample opportunity to apply alternatives to controlled problem situations under the guidance of the teaching faculty.
4. Intensify the educational opportunity by providing computer terminal equipment for each two-three students, a large staff of teaching assistants, and a minimum of conventional lecture.

5. Send the student home with the ability and means to experiment in his own office with time-sharing computer services at minimum probationary costs through a special sub-user account with EDUCARE.
6. Initiate a pooling of techniques, programs and supporting assistance and information exchange systems by means of the network facilities of EDUCARE.

GENERAL INFORMATION:

Lowell Center is a luxurious new adult education center, air-conditioned with its own indoor swimming pool, recreation room, and dining facilities operated by the University of Wisconsin. Parking spaces can be reserved if you are driving to Madison. Each room has its own phone extension which will indicate telephone messages at the desk and the switch board operator will note your incoming calls. The number at Lowell Center is 608-256-2621.

Supper will be served on Sunday at 5:30 and the first class will be scheduled to begin promptly at 7 p.m. Sunday evening in the Library at Lowell Center. Only the first 30 registrations can be accepted for each course session.

TUITION AND FEES:

Course tuition -----	\$150.00
Charge for Computer Terminal Time-----	95.00
Workbook and Materials-----	25.00
Room and Board-----	90.00

There are no other fees.

A \$60 non-refundable deposit is required with your reservation.

INSTRUCTIONS:

Indicate your registration by mailing the enclosed reservation card to Lowell Center. Send the enclosed addressed envelope to Mr. Fred Roberto, our seminar administrator with a check for the full charge above or a non-refundable \$60 reservation deposit, made payable to EDUCARE, Inc.

For an "appraisal" of this program, why not ask the original guinea pigs?

Norman R. Benedict	Robert L. Garrett	John Shanahan
E. Nelson Bowes	M. B. Hodges, Jr.	John S. Schneider
Roy R. Fisher	Arnold Kaufman	J. W. Thorington
	Joseph A. Lo Pinto	

Draft
Date unknown

similar to that of

Dear _____

We ~~were/delighted/to~~ look forward to your visit on campus for EDUCARE/ ~~and~~
All of us are undergoing ~~the~~ psychological conditioning of Mohammed Ali for
the big match. We offer the following suggestion to maximize the value of
your time on campus.

First, bring along a couple of investment problems from your office that you
would like to work on while you are here and we will try to assist in the
application of some of the seminar tools to your case facts.

Be prepared for a Spartan session of lecture, discussion, and many hours of
exercise from 8:30 until 10:00 p.m. each evening. The only possible relief
is the indoor swimming pool at Lowell Hall for which you will require a swim
suit, despite what you have heard about the Madison campus.

On Sunday evening we will host a casual somrgasboard dinner at ~~the~~ Top Hat
restaurant but after that point the Lowell Hall cafeteria will be your ban-
quet circuit. If you have any special dietary problems, please let us
know and we will try to provide accordingly. Otherwise you need no textbooks
slide rules, papers or pencils.

Best Regards

James A. Graaskamp
Associate Professeo in Busiæess

July 22, 1971

Dear Registrant:

We recognize that before you arrive in Madison for a five day retreat with EDUCARE, there will be little time to study or to read much advanced material. Still you may find it useful to read a few lines and to sense the thrust of the seminar as you travel to Madison. Thus we have enclosed a brief outline of topics and lab sessions and a READING ASSIGNMENT! It is most important you read the enclosed article from the Harvard Business Review on investment analysis which was written in 1959 but has yet to reach the real estate world. Equally interesting is the article on the past and present of computer time sharing potentials.

First a comment on the schedule of topics and lab problems. On Sunday and Monday we intend to provide you with sufficient understanding of the elements of computer hardware and software that you grasp the simple minded and relentless logic of the monster and lose your sense of awe as you lead it around by a "do-loop" in its nose. On Tuesday we will direct your new found ability to use a computer terminal to a series of elaborations on traditional appraisal methods of investment income analysis with three objectives. First we want you to gain confidence on the terminal in doing the familiar; secondly we wish to illustrate that the computer makes it possible to remove all the limiting assumptions imposed on traditional appraisal analysis by the limits on a man's time or his mathematical ability; and third we wish to plant the seed of suspicion that the tool in your hands far exceeds the capacity of current appraisal theory to use it properly.

On Wednesday we will use the subject of statistics to teach more about the techniques and powers of a computer terminal. Existing appraisal theory has always implied statistical probability in its structuring of data and analytical inferences in the valuation process but professional education has never provided the would-be appraiser with the necessary statistical tools. By Wednesday afternoon you will be in a position to better compare the potential of time sharing computer techniques to programable calculators and the professional growth which is possible with each. On Wednesday evening we will explore the host of programs and services available on GE Time Sharing and thus to EDUCARE graduates who choose to try time sharing in their office.

Note that throughout the first three days of the program, 30 minutes of lecture is alternated with equal amounts of lab time so that it is not a lecture course. It is a workshop program to give you the confidence to try terminals in your own shop.

Only on Thursday morning will we lecture briefly and provide a great variety of sample outputs which bear directly on real estate problems. Most of these samples represent operational programs by other professional groups - the certified public accountants, the planners

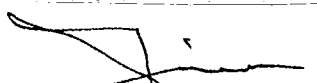
and architects, the engineers and government technocrats who are moving into the field of real estate analysis.

We will conclude by mid-Thursday afternoon but the equipment remains available for your use as will Prof. Knitter and myself for the balance of the day.

Our first educational objective is to place a new tool in your hands which is within your economic means; our second objective is to stimulate imaginative and innovative practical use of this tool in real estate; but our essential objective is to confront the real estate profession with the implications of twentieth century tools for modernizing appraisal theories and educational programs. On this point you have a reading assignment on the meaning of professional societies by Ralph Nader!

Sunday supper will be served at Lowell Hall at 6:00 P.M. and we look forward to breaking bread with you.

Cordially,



James A. Graaskamp



H. Robert Knitter

J. Graaskamp

EDUCARE NEWSLETTER
AUGUST 1971

NEWS ITEM FOR ALL OF YOU WHO ATTENDED THE VERY FIRST
EDUCARE CONFERENCE IN FEBRUARY, 1971.

The Educare Computer Network is available and there is a small but growing library of programs currently being stored for all who find them useful. As a result of our most recent two conferences in August and July we have more than 25 subscribers within the Educare network. You will find enclosed a summary description, of the first few programs available in the Educare library. The number in the library will increase and future announcements will be sent to all subscribers. If you choose to sign up for the service the associated application form may be used or you may contact Bob Knitter (608/262-3816) directly for immediate access to the G. E. system.

NEW ADDITIONS TO THE EDUCARE LIBRARY.

The responses from current students in the Educare course lead us to believe that the most interest in new but yet unavailable programs for the Educare library is associated with a land development model and appraisal model. The latter program would accept a subset of comparables and will then make the necessary adjustment calculations so that these comparables may be compared with one or more subject properties. Availability of this program will be announced in subsequent issues of this irregular newsletter. Also planned is a program which will allow the user to make projections using either straight line or growth functions

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which are based on the best fit for data previously entered. This program is intended to be used for short term predictions of population growth and similar growth phenomena.

WHERE TO GET WHAT

In order to become a user of the Educare Computer Network you need a terminal. Which terminal? The most common and least expensive computer terminal device is a teletype and in order to simplify your ordering such a device and its associated supplies we have enclosed a sheet of a few national vendors of this piece of equipment on a lease basis. Also for your convenience we have included the description of supply items that you will need with the teletype and the sources we have currently been using for these items. We make no specific recommendations as to quality of the products or competitiveness of the prices from these sources. Names and addresses are provided as a convenience only. The costs are suggested costs which were given us at the time of our most recent inquiry. If you can negotiate a better deal, by all means do so.

EDUCARE COURSES

For the next series of Educare courses we are trying a new experiment and will offer the courses over weekends. The first course will begin on the evening of Friday, October 15th and finish the afternoon of Tuesday, October 19th. The second course will begin on the evening of October 29th and finish in the afternoon of November 2nd.

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EDUCARE COMPUTER NETWORK

Application for Service

Date _____

Subscriber Name _____

Business Phone _____ Home Phone (opt.) _____

Requested Password _____
(1 to 10 letters and digits)

Billing Address:

I assume responsibility for all charges accrued to my
assigned user number on the G. E. Timesharing Network.

Applicant Signature

Return to:

Educare
Attention: H. R. Knitter
533 S. Segoe Road
Madison, Wisconsin 53711

Abstract of Programs Currently in the Educare Library

ELLWOOD

This program will provide the normal computations associated with Ellwood calculations. It is designed to allow maximum flexibility of data entry from the terminal and will prompt the user both with brief and more extensive titles of the data items being requested. It will use either mortgages stated as a percent of value or as a dollar amount and will provide for the statement of either the term of the mortgage or the annual payment constant. At the option of the user it provides either a brief summary output or an extended proof of the value and the associated rates of return. (This program will soon be extended to provide a sensitivity analysis.)

RATES

This program is intended to calculate the internal rate of return for an arbitrary series of cash inflows and outflows. It will also provide a basis for comparing the values of these inflows and outflows to various investors who may be exposed to a different cost of capital. It will also provide the present value of any series of flows at a given rate of return.

CIT

This program will accept a period and rate. It will then calculate the 6 factors normally tabulated in compound interest tables for the stated period and rate. The factors which will be calculated and printed are: (1) the amount

at compound interest, (2) the accumulated amount at compound interest, (3) the sinking fund factor, (4) the present value, (5) the present value of an annuity, (6) amount required to amortize over the period.

MAILBOX

The "Mailbox" program was written to facilitate exchange of messages between users on the same user catalog of the G. E. Timesharing system. The Mailbox program itself provides procedure which allows the user to check the status of messages which concern him. It further will provide a mechanism through which he may notify another user that he has created a message for his attention. In order to communicate with another user the person entering the message must merely provide the subscriber suffix (last 2 digits of user number) under which the addressee will normally log on, his name and the name of the file which contains the message. The actual message is created as a normal file; the only restriction on that file is that the sixth character of the filename must be an asterisk (this notation will make the file accessible to all users within the same catalog). Upon running the Mailbox program the user will be required to provide a name. This should normally be his last name but must correspond exactly with the name to which a message was posted. He will then be required to respond to the inquiries.

MINIMOD

This is the most comprehensive program currently in the Educare library. The program provides for a complete cash flow analysis for before and after tax investment values. It features provisions for multiple assets using individualized depreciation methods and multiple mortgages with options for stayed refinancing. It is designed to permit the user to select from very brief (a few lines) output to a very extensive (multiple pages) analysis. It has been designed to minimize computer costs and therefore encourage experimentation. The cost of running this program is negligably greater than the cost of printing the output.

LEASE/PURCHASE SOURCES

Teletype Leasing

The following teletype was used at the Educare Conference:

Model 33 ASR, friction feed, originate only, teletype with an acoustic coupler

Teletypes may be leased from:

A. Western Union Data Services

1. Mr. Joe Steele
Western Union Data Services
600 Enterprise Drive
Oakbrook, Illinois 60521
Phone 312/654-0560
or
2. Western Union Data Services
Corporate Sales Office
16 McKee Drive
Mahwah, New Jersey 07430
Phone 800/631-7050 (toll free watts number)

These teletypes have a minimum 30 day lease at \$65/month plus one time handling charge of \$65. Maintenance is included in the lease.

B.

1. Mr. H. J. Benham
RCA Service Company
7620 Gross Point
Skokie, Illinois 60076
Phone 312/965-7550
2. Mr. B. Grossman
RCA Service Company
Building 204-2
Cherry Hill Offices
Camden, New Jersey 08101
Phone 609/963-800 Ext. PY4129

These teletypes have a minimum 60 day lease at \$65/month plus a one time handling charge of \$74. Maintenance is included in the lease.

On all items, check the Yellow Pages under Data Processing Supplies/ Equipment for alternate sources and competitive prices.

August 1971

Teletype Purchase

If you would like to purchase a teletype:

Mr. John Klupar
Teletype Corporation
5555 W. Touky Avenue
Skokie, Illinois 60076
Phone 312/982-2543

The teletype like we used in the Educare Conference will cost around \$890. The sale terms are FOB Skokie, Illinois - Net 30 day. An acoustic coupler for your teletype could be purchased from:

Albert Brooks
Anderson Jacobson, Inc.
1441 Sherman Road
Northbrook, Illinois 60062
Phone 312/498-4220

Their ADAC 242 acoustic coupler sells for \$345 and has a one year warrenty. The sale terms are FOB Sunnyvale.

California - Net 30 days.

Remember, purchased teletypes will require you to pay for all maintenance at a rate of about \$16/hr. Under favorable conditions you should allow for two to five hours of maintenance per year depending on the age of the machine. Teletypes are normally expected to last about three to four years with normal usage.

Teletype Wheels

If you would like your teletype to be mobile we suggest you purchase a hand cart designed especially for the model 33 teletype. The carts are \$5/month if you rent them and \$39.00 (plus frieght) if you purchase. Contact TTS if you wish to purchase a cart.

TTS
2928 Nebraska Avenue
Santa Monica, California 90404
Phone 213/829-2611

August 1971

Teletype Supplies

Teletype supplies are available from:

Mr. Robert Cummings
McGregor & Werner, Inc.
6411 Chillum Place, N. W.
Washington, D. C. 20012
Phone 202/882-9688

Describe the teletype supplies for a model 33 teletype as follows:

- 1) Teletype paper (normally packed 12 rolls per carton)
Order 8 1/2", friction feed, one ply, white or yellow
paper. The price will be \$10.92 per carton. Stock No.
MWTR84.5 (specify white or yellow)
- 2) Teletype ribbons (normally packed 1 doz. per box) Order
nylon ribbons with a small hole in the center of the reel.
The price will be about \$11.00 per box. Stock No. TR1
- 3) Paper tape (normally packed 28 rolls/carton)
Order 1" by 100', 8 track, unoiled, paper tape.
The price will be \$17.92/carton Stock No. MWPT18.

White Bond Teletype paper is available from:

Hewlett Packard Corp.
5500 Howard Avenue
Skokie, Illinois
Phone 312/677-0400

Stock No HP 9280-0046
\$2.50 per roll quan 1-11
\$2.00 " " quan 12-999
12 rolls per case

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Miscellaneous Items

For tape storage we recommend

Tape Filing Boxes (4" x 4" x 1")
\$6.50 per case of 50 plus shipping
Stock # 1052469
Singer, Friden Division
P. O. Box 2138
San Leandro, California 94577

For tape winding the best device yet is a home-made gadget available in limited quantities from the garage workshop of

William J. Alexander
121 South Eighth Avenue
La Grange, Illinois 60525

\$8.00 per winder; 90 day warranty

February 14, 1972

Dear Registrant,

The staff of EDUCARE looks forward to hosting you on campus for the EDUCARE seminar beginning February 20.

Enclosed you will find a number of reading assignments with which you should be familiar before you reach Madison.

"How to Assess Investment Proposals", Robert H. Baldwin, Harvard Business Review, May-June 1959.

"More Glitter than Gold: Time Sharing", Edward J. Menkhaus, Business Automation, November 1970.

"Professional Responsibilities in a Professional Society", Ralph Nader, AIP Newsletter, November 1970.

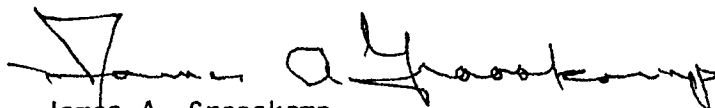
We expect to serve supper at 5:30pm Sunday evening February 20 in the Lowell Hall dining room in order that we may begin classes at 6:30 Sunday evening. You shall do an Ellwood problem on terminal before GE signs off the air at 8:00pm!

You may schedule return flights any time after 1:00pm on Friday the 25th as the afternoon is scheduled for problems on the terminal as your time permits.

We urge you to BRING SOME HOMEWORK from your office. You may bring all the details on an investment case, a 236 feasibility study, or a buy-lease problem which you may wish to analyze. In addition we have a market comparison model so you might wish to bring 20-30 sales of appropriate comparability and test the system on what you know about your market.

You will not need a car on campus and we would be happy to schedule some special transportation problem you might have. Lowell Hall has a fine indoor swimming pool so you may wish to bring swimming gear. Professor Chuck Clettenberg is a patsie at handball if you need to restore your self confidence in our beautiful Nielson Indoor Tennis Stadium.

Cordially,



James A. Graaskamp,
Associate Professor of Real Estate

JAG/hw

April 7, 1972

Robert A. Steele
Shattuck Company
5405 Wilshire Blvd.
Los Angeles, California 90036

Dear Bob:

Bob Knitter was called to Milwaukee due to the death of his father-in-law and asked me to equip you for the Southwestern Appraisal Conference relative to EDUCARE.

Enclosed are the following:

1. A written piece describing the nature cost and technical constraints in Course I which we wrote for consumption for the various appraisal magazines. Note that the only remaining meetings are the two in July and the one in September and each is half filled.
2. The manual for our brand new AIP program which is a very flexible cash flow investment analysis system which we purchased in a liquidation sale of Land Dynamics in Dallas, Texas.
3. Our popular Mini-Mod with an edit program to check for mistakes before the data file is run. We are building a similar edit plan for AIP.
4. A complete Ellwood model which will compute all the points required with a graph with or without the J factor.
5. Our super market comparison model with statistical controls on the selection of comparables and the estimated value conclusion.
6. Rates - our internal rate of return model which we use for everything from stock share analysis to land development feasibilities.

We are using some of GE's stuff as well, such as lease or buy programs, step-wise regression and cash budgeting. EDUCARE has come a long way and is the best buy around when using network. We have 47 on network and should have 60 by the end of July. That means it has cost the industry less than \$500 per man to bring 60 of its top professionals into the Twentieth Century.

We'd like to see you in Madison so you can see what else we're doing. Regrettably I only have 12 EDUCARE applications left and won't be able to retrieve my reserve supply until Monday.

We all appreciate your help in promoting EDUCARE.

James A. Graaskamp
Associate Professor in Business

April 7, 1972

James A. Hueser
Society of Real Estate Appraisers
7 S. Dearborn Street
Chicago, Illinois 60603

Dear Mr. Hueser:

All of us at EDUCARE will be delighted in working with you and Dan Swango in preparing a demonstration for the appraisal conference in San Francisco. In fact, I would be delighted to be in San Francisco to answer questions myself although Knitter may let the air out of my tires and beat me to the airport.

Will prepare a CARE package of alternative EDUCARE cash flow programs and mail them directly to Dan. Will also try to convince Dan to attend EDUCARE in July.

Who pays my restaurant bill in San Francisco?

Best regards,

James A. Graaskamp

IMPORTANT READING FOR ASREC MEMBERS

on

EDUCARE

1972

EDUCARE is a non-profit, tax-exempt, educational foundation eligible to receive tax deductible gifts. The name is an acronym for the Educational Foundation for Computer Applications to the Real Estate Industry, Incorporated. For the present, EDUCARE has contracted with Professors Robert Knitter and James A. Graaskamp, CRE, to develop and conduct EDUCARE Course I with the cooperation of the University of Wisconsin Extension program. In addition, the EDUCARE Corporation wholly owns a subsidiary corporation, EDUCARE Computer Network, Inc., to supply continuing computer program services and computer operation assistance for the ongoing education of real estate professionals who have taken Course I and joined the network. Each of the sponsoring organizations initially advanced a total of \$37,500 partially as a loan and a grant to EDUCARE. Course attendance is limited to members of the sponsoring groups and their employees.

Who needs it?

Certainly not the national CPA firms which all offer their clients real estate investment valuation models; nor do investment bankers who operate in real estate financing using computerized cash flow models and statistical systems which have been used in capital budgeting for industry for many years. Civil Engineering firms have been using sophisticated models for economic cost-benefit studies for a long time. Today it is the former client of the appraiser who seeks these services and who is discovering which professions offer contemporary methods. Only the counseling and appraisal fraternity may lose out as others supply the needs of the market.

What does EDUCARE Course I do for the appraiser and the counselor?

Computer power simply places comprehensive information and data processing methods in the counseling and appraisal office in an amount and at a cost which is overwhelmingly in favor of the user and client. On the first day, Course I teaches the student to sign on and off the system via telephone and to access the library of programs freely available on the General Electric Mark II System virtually anywhere in the United States. On the second day, the program proceeds to teach both statistics and terminal use of statistical programming; not to mention the process of building property sales files and use an automated market comparison system. The terminal makes it possible for the counselor and appraiser to use techniques he has always understood but has feared to try lest his mathematics fail him in the process. EDUCARE presumes everyone had high school algebra and forgot it.

On the third day, EDUCARE teaches both modern capital budget theory and the use of internal rate of return programs, cash flow investment programs and a valuation program designed for counselors and appraisers by Mack Hodges and Thomas Prince. On the fourth day, EDUCARE introduces several sophisticated services for real estate analysis such as realmetrics and ommimetrics. That afternoon the student is introduced to current developments in cost estimating, property management accounting, aerial photography, and model building which would revolutionize the information base and forecasting techniques of real estate decision making.

On the fifth and last day of the program, the dollar costs of terminal rental and usage are presented together. They include equipment choices, the appropriate application of electronic calculators, the services of EDUCARE Computer Network,

Inc., and new developments in hardware which will further reduce the cost and expand the applications of time-sharing techniques in the next few years.

Must one be a "Programmer" to attend or appreciate EDUCARE?

NO! It is unnecessary to know programming to use a terminal to advantage. You needn't understand circuitry to use a television set, or even build a television set with a kit. The same as a programmer doesn't need to be a counselor or appraiser to buy his real estate. It would be impossible to learn programming and systems design in five days.

Will I be taught nothing but the computer?

Most of the quantitative analysis that you currently use could be done on an old envelope or tablecloth. The Course I student will be doing Ellwood complete with the J factor and more points for the Ellwood chart than he may be prepared to graph within 30 minutes of the start of class on Sunday night. Course I introduces modern theory of capital finance before introducing cash flow models.

The course isn't expensive!

\$475 for a one very full week course is not higher than any other course normally offered by real estate societies; it includes room and board and the cost of technical support. There is at least one teletype and one telephone line for each two students and each student will cost EDUCARE a minimum of \$100 for computer time despite the educational discounts provided by the General Electric Company for the program. Professors Knitter and Graaskamp have been contributing their services at a fraction of their usual consulting rate. There is an additional staff of graduate students in computer science and real estate who serve as instructors for all lab periods. The cash break-even point approaches 25 students for each of the three remaining courses for 1972. These costs compare to charges averaging \$100 per day for courses offered by other management associations.

Why is Course I offered only in Madison, Wisconsin?

There are significant set-up costs with a program such as this: The use of multiple rented terminals on terms which make it extremely desirable to offer repeated courses in one location; remote computer access requires telephone facilities which can usually be obtained most inexpensively under the educational facilities available through major universities such as the University of Wisconsin. The extensive use of trained lab assistants requires an abundant supply of individuals with unique capabilities, who work inexpensively, such as graduate students. Furthermore, it is difficult to find comparable costs for the physical facilities and room and board.

What do I do for help after Course I?

Computer time-sharing services are available throughout the country. Anyone who has the necessary interest can become a customer of General Electric Time-Sharing, Service Bureau Corporation, Time-Sharing, Inc., or a host of other computer time-sharing vendors. Furthermore, several program authors are making real estate investment analysis programs available through one or more of these time-sharing services. Most significantly, it is felt that the programs which are unique to real estate and form a substantial part of the instructional material of EDUCARE Course I are available through a newly-formed subsidiary of the EDUCARE Foundation called the EDUCARE Computer Network, Inc. You are now a part owner of it. An attendee at an EDUCARE course can sign up for the services of EDUCARE Computer Network and obtain access to all of these programs plus all of those currently available under G.E. Mark II. Direct cost of using G.E. services through the EDUCARE Computer Network is exactly the same as the charges of G.E.

Individual customers of General Electric are required to accrue charges in excess of \$100 per month or pay a monthly minimum of \$100 per month. EDUCARE Computer Network is the customer of General Electric that is exposed to the \$100 minimum. It does not require any specific minimum for computer services from its customers. There is a charge for access to the EDUCARE Library program -- currently a minimum library charge of \$10 per month. The Network system offers a number of programs which are typically used by consulting and appraisal offices but not always available from other vendors. For example, there is the complete Ellwood model. There are several cash flow models, a market comparison model, some basic statistical and linear regression models and others that will be developed as people from EDUCARE go back to their offices and find out what best fits their purposes and how best it might be designed and formatted. The most significant contribution of an on-line time-sharing system to the real estate industry may be the fact that it is a continuously changing and dynamic entity. As new concepts are implemented in terms of models they will become available on this Network and offer new potential for use to all the subscribers of the Network.

It should also be noted that programs are often prepared in conversational form so that the user need only have the most limited previous experience in the use of either the terminal or time-sharing network. This type of program guides him through the need of data and provides him with an interactive programmed learning tool. This helps him to become familiar with not only the device and the program but also the mathematical concepts and minimum procedural requirements to pursue sophisticated computational or mathematical analysis.

What is the 1972 Course I schedule and how do I apply?

July 16-21

July 30-August 4

September 24-29

To be eligible, a registrant must have either a C.R.E., S.R.A. or M.A.I. professional designation or be sponsored by an employer who is certified. Write for application forms to:

Norman R. Benedict, C.R.E.
2830 Whitney Avenue
Hamden, Connecticut 06518

or

Ron Brown, C.R.E.
2005 N. Navarro Street
Victoria, Texas 77901

What is the future of EDUCARE Network, Inc.?

A new Network two-day seminar was authorized to serve over 80 percent of past Course I students who have joined the Network. They will annually or semi-annually meet in Madison, Wisconsin, after a regular Course I. This will be timed so that full computer service will be available to them.

One day they will be taught new computer techniques. They will be fully trained to operate all of the new computer programs put on-line with the Network. The second day will be an open discussion of what new programs they want to be developed for their use to better serve their clients, their paychecks, vacations and new car.

Why should I attend EDUCARE?

It's more fun and personally satisfying to be a leader rather than a follower. Don't play catch-up counseling!

September 4, 1972

Mr. David W. Smith
55 Almeida Terrace
Apt. 17
Portsmouth, R.I. 02871

Dear Mr. Smith:

Unfortunately I cannot provide you with information on seminars in the Boston area in that Educare currently has no plans to provide instructional services outside of the Madison, Wisconsin, area. As the attached writeup of our educational program points out, the support required for our seminars depends upon access to a large number of assistants, teletypes, and telephone lines. This makes the course rather "unportable".

Educare Computer Network uses services of G.E. timesharing and provides to users all the features available as subscribers of G.E. timesharing and in addition makes available to them access to a library of programs specifically designed for real estate professionals. These are described on the attached program list summary. Most of the programs are of the cash flow type and there appears to be a rather significant shift in the real estate industry toward more sophisticated financial analysis using cash flow techniques. I will confer with Professor James Graaskamp of the School of Business, University of Wisconsin, and together we hope to prepare a small package of literature which you may find interesting and descriptive of the current procedures and practices associated with computers in real estate.

Most of the programs on the Educare Computer Network are written in either the Fortran language or in Basic which on the G.E. system is a language of significant flexibility.

If we can be of any additional assistance, you may correspond with me at the Computer Network address or with Professor Graaskamp or myself at the University of Wis., School of Business, 1155 Observatory Drive, Madison, Wis. 53706.

Sincerely,

H. Robert Knitter
General Manager

cc: James Graaskamp

September 4, 1972

Mr. James Thomas
Coldwell Banker Management Corp.
533 Fremont Avenue
Los Angeles, California 90017

Dear Mr. Thomas:

Thanks for your letter of August 25th. I spoke to Jim Graaskamp and he also pointed out that you discussed our programs with him. I have arranged to have the following sent to you: the available documentation on the MINIMOD program which should show not only input formats but also sample output, the documentation available for the AIP program, and the current documentation available for the Market Comparison program. The market comparison program is currently being extended to provide for more flexible adjustment procedures and also selection mechanisms prior to the computations associated with market comparison. Also included is a writeup on the rates program. These constitute probably the most significant and useful parts of the small set of programs available on the Educare Computer Network.

I should point out that current policies permit access to Educare Network services only to those individuals or associations who have previously attended an Educare course. Should you be interested in our programs I would encourage that someone from your office attend one of the 1973 courses. If we can be of any more assistance to you, please don't hesitate to write again.

Sincerely,

H. Robert Knitter
General Manager

cc: James Graaskamp
Alan Hembel

September 4, 1972

Mr. Roger Christianson
John Crosland Company
P.O. Box 11231
Charlotte, North Carolina

Dear Roger:

Jim gave me your letter of August 25th. You're right, there is a problem with the Ellwood program. The problem has been corrected and the revised version should be available after the weekend of September 2nd. Thanks for pointing it out to us; that's about the only way we learn about difficulties users encounter. Don't hesitate to point out additional problems as they arise.

Sincerely,

H. Robert Knitter
General Manager

cc: James Graaskamp

Michael E. Jakes
Manager, New York Operations
529 Fifth Ave. Suite 1901
New York, N. Y. 10017

Draft

LDear Mr. Jakes:

Here at the U. of Wis. we teach a program for the professional real estate societies on the use of computer terminals by the real estate professional. The objective in one week is to train them on the use of the standard teletype terminal or selectric typewriter modification and introduce them to the variety of services available on GEMark III. We emphasize that other time sharing services will be providing more and more services for the real estate profession in the next few years. During 1974 the seminar will be presented not only in Wisconsin but in Texas and California as well.

Thus we were interested to learn of your SITE demographic system and its time sharing capabilities. It prompts the following questions:

1. Would it be feasible or desirable for EDUCARE faculty to demonstrate the use of your system during our program, and if so, what would be the cost of acquiring the password or account number for these purposes? EDUCARE is purely an educational organization on a non-profit basis and does no commercial work for anybody.
2. Would it be possible to obtain 80 brochures describing your program which we could mail to the 80 firms which have taken the seminar and are presently using time sharing terminals in their office? Does your service provide any population projection factors for adjustment of 1970 census information? ~~your~~ ^{the} brochure speaks of the adaptability of your program to small inhouse computers. The Sch. of Bus. operates a 1410 and in our real estate program all of our students are required to do census data ~~and~~ analysis and community growth modeling. What would it cost the Sch. of Bus. to acquire ~~and use~~ or use the SITE system as an educational device for real estate and marketing students?

The Board of Directors of EDUCARE is meeting during the third week of October and so we would appreciate your thoughts in terms of input to our seminar program in time for review by our board. I have enclosed our EDUCARE brochure for this year which describes the origin and nature of that program.

Yours truly,

JAG
APB