following factors: specific academic majors available, cost, employment opportunities after graduation, variety of courses available, teaching reputation, general reputation, academic advising, financial aid available, faculty reputation, housing opportunities and career counseling.

In developing a marketing strategy for its current market segment, the College can ignore the following factors: friend's rating, honors program, athletic facilities, parent's preference, high school counselor's rating, varsity sports, intramural sports, male/female ratio and ethnic mix.

Recommendations

A marketing strategy for a college of agriculture is specific and unique to the institution; however, the inputs to the strategy can be generalized somewhat more widely for comparison and contrast. The market segment identified by this study seems to be very much like other colleges have. It seems reasonable for colleges of agriculture to investigate if their traditional pool of students has been sufficiently exhausted.

This study is only the beginning step in the process of information gathering for input to the marketing strategy of the College of Agriculture at the University of Idaho. Substantial work needs yet to be done to verify these findings and to explore the existence of other potential market segments.

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Computer Literacy—An Alternative Approach

Gene W. Lewis

Just a few years ago a new buzzword exploded upon the American scene and it rapidly became a household expression. The new phrase was "computer literacy" and it stirred a lot of questions concerning "what is it?" and "how do we obtain it?". Though very few denied the significance of computer literacy as a societal issue, it soon became apparent that there were numerous definitions of the term. However, one aspect of the "how do we obtain it" question seemed to have almost universal acceptance from the start, and that was the issue of programming being a part of any computer literacy training.

A computer literacy requirement was implemented for all majors here at Delaware Valley College about five years ago and the initial course outline included a heavy orientation toward programming using the BASIC language on a microcomputer system. After a year of using this approach several results were observed. First of all the students taking the course almost never returned to the computer center to use the equipment for other course work once the literacy requirement was completed. The opinions expressed by a large number of the students was that if they had to be programmers in order to use a computer that they had no further interest in the technology. So, instead of turning the students on to the power of the computer, we had turned them off even further. We had countered our original objectives by placing an association in their minds that successful computer use required mastering the time-consuming and precise skills of programming. Our first attempt at literacy, as we observed it being implemented at other schools, had not had the positive results that we had originally targeted.

After taking a hard look at the issue, and keeping in mind our original goal of attempting to provide a positive learning experience that would stimulate our students to perceive the computer as a powerful contemporary tool, we decided to develop an alternative approach to the subject of computer literacy. Our new format would concentrate instead on illustrating several contemporary business applications using the computer in a hands-on setting. There would be no programming taught in this new approach.

The course would start with a fundamental definition of the difference between hardware and software. This would provide the lead in to the first part of the course, which would emphasize hardware vocabulary and basic system architecture from microcomputer to supercomputer. We would build, in a figurative sense, a generic computer from the inside out. Starting with the major components inside the "black box" such as the CPU and memory, we would then add on a family of input/output devices and auxiliary storage until we had created a completely functional system. Whenever possible we attempted to use such "show and tell" handouts as computer chips, printed circuit boards, hard disks, floppy disks, ribbon cable, etc.

This hardware-first approach had several goals in mind. First of all it helps to provide a fundamental systems vocabulary that is reinforced throughout the course. It also removes some of the mystery from the computer by breaking the device into its functional units and showing the relationships between these units. This becomes important when you start to introduce the concepts of "loading," "saving," and "printing" application software and data files. We also felt it was important to establish an understanding of

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system capabilities in terms of hardware to help distinguish the many differences between micro, mini, and mainframe computers, and why each family has its place in the system hierarchy.

Finding a textbook to match this approach was difficult at first. However, there are now several recent texts on the market that adhere to this outline of looking at the hardware first, and then follow on with good illustrations of the many and varied uses of the computer as a tool. Many of these new texts have also placed software design into a more proportionate role with their emphasis instead on applications.

We then analyzed contemporary business system applications and came to the conclusion that, for the purposes of this course, we could categorize the majority of business applications into data management, productivity enhancers, and decision support with data communications as the ingredient linking it all together. With these categories in mind we felt that software in database management, word-processing, and spreadsheets could be used to model these three applications. As this software was more readily available, and considerably less expensive, for microcomputers than our mainframe, we chose the micros as the systems for presenting the course. We also felt that microcomputers provided a friendlier learning environment than the mainframe, and that they were also more likely to be the type of system that a student would interface with upon graduation. If we were successful in our course goals, the microcomputer would also be the type of system that a student could afford to purchase himself for continued use throughout his college experience.

The sequence of software presentation was our next decision and we adopted the order of operating system, wordprocessing, database management, and spreadsheets. Obviously the operating system, in our case MS-DOS, would have to come first in order to provide the necessary tools for the student to load and operate the applications. It was decided here that there were about eight MS-DOS commands that a student should be conversant with in order to independently operate the microcomputer after booting the system. These operating system commands were: DIR, FORMAT, COPY, DISKCOPY, DISKCOMP, ERASE, RENAME, and CHKDSK.

Wordprocessing was the first application introduced because we perceived it to be the friendliest, easiest to learn, and the application that would provide the most immediate link with the students as something that they could use for other courses. It was also easy to use it as a readily understandable example of the computer as a productivity enhancer. Database software was used to follow the wordprocessing as an illustration of one of the oldest and most widely used applications of the business computer: i.e. data management. The power of database software was reinforced by having the student build a small database and then perform both a sort and search through their records. The final application used was spreadsheets as an example of software designed to aid in the decision making process. The spreadsheet was used last primarily because of its complexity and quantitative nature in comparison to the wordprocessing and database. Typically, by this point in the course, the student is ready to tackle a new package with a minimum of direction.

When we first decided upon this new format, it was not easy finding the correct software to use for our needs. Even though there were several well known integrated packages on the market at this time, they were considered to be too complex for an introductory course of this nature where there would be limited time for each application. Peachtext 5000, which contained all three applications, was made available to us at a significant discount by a local vendor for our initial try. However, we were still limited by not being able to allow the students to have their own copies of the software, and, additionally, we did not have a workbook they could use independent of class. Within the last year, though, this format seems to be gaining in popularity as there are now several student packages on the market using these applications. We recently selected a collection of Buttonware software packages that is being packaged by D.C. Heath(1) along with the workbook and tutorial. The complete package costs the student $20, and it permits them the extra learning experience of having to maintain their own disk library. The students also now have their own package that they can continue to use on any MS-DOS compatible equipment.

One of our other important goals for this course format was to provide the student with the opportunity to "teach himself" various packages as a learning experience for using more advanced software in the future. In support of this objective we use some Computer Aided Instruction (CAI) packages in addition to having the student learn from the workbook. This way the student has a comparison for personal choice in the future for self instruction.

The subject of programming has not been abandoned, but it is now covered in a lecture on software that portrays the role of programming as the link between operating systems and applications. The progression of programming languages is discussed from first generation to the present fourth generation languages involving application generators and artificial intelligence languages. Also, if a student feels that he would like to have further exposure to using a language, then we have follow up courses in both BASIC and COBOL.

As one of the primary intentions of this new format was to generate an enthusiasm towards computer use, there are also several other techniques that we have experimented with in this course. We use several recently produced video tapes on the subject, such as "Computers - Tool For The Future" from National Geographic(2). We have had guest speakers in from the

local computer community, which has worked very well. As an extra credit project we have allowed the students access to some very sophisticated game software or mouse driven graphics packages. Our English Department has recently installed a "Writing Across the Curriculum," program, and in support of this we now require a short paper on some article involving a recent application of the computer in a field related to the subject's major. Even though they initially wince at the mention of a writing assignment, this has proven to be one of the most valuable parts of the course. Not only does this assignment require them to utilize their newly acquired wordprocessing skills, but it also is the basis of a round table discussion during which everyone summarizes his paper with the class. Feedback at the end of the course now shows us that it is at the point of this discussion that the students start to understand and believe the message about how computers are, and will be, affecting their lives.

After using this new course format with over 700 hundred students for two years now, we have witnessed several dramatic results. First of all we now have a very busy computer center with a growing percentage of students returning from previous sections to use the equipment in other class projects. Our student course critiques have also evidenced a positive swing toward acceptance of the computer as an important tool in their lives. The students now acknowledge that "even I can use a computer!" Because of this increased student acceptance we are now seeing other departments in the school pressing harder for their own microcomputer systems. We are even getting feedback from local vendors about the number of our students who are starting to purchase their own systems, and in most cases it is a student who has taken this new course format. Our conclusion has been that even though we may not have completely defined what computer literacy is, we seem to be moving in the right direction by replacing programming with applications in our introductory course. To date this format has been successful enough at meeting our original goals of a "user friendly" computer learning environment that we intend on continuing with this outline for the next several years.

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AN INSTRUCTION AID

A Microcomputer-Assisted Futures Trading Game

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Abstract

A spreadsheet is being used to maintain the accounts of simulated futures trading of students in the Department of Agriculture at Western Illinois University. This simulated trading activity is being supported by three commodity price quotation services that provide tick-by-tick quotations.

Introduction

The intermediate futures trading course taught in the Department of Agriculture at Western Illinois University has two primary goals: 1) to familiarize the students with the jargon and institutions unique to the futures industry, and 2) to instruct them in the characteristics of several popular technical tools — including bar chart, point-and-figure chart, volume and open interest, moving averages, momentum, percent R, stochastics, relative strength index, and directional movement index — as well as in the use of these technical tools for the identification of trading signals by multiple hedgers and speculators. Because of this approach to teaching the course, there is insufficient time in the semester to incorporate a trading game as an instructional aid.

The WIU Trading Association — a student club — was formed primarily to provide students with the experience of real-time paper trading. Since the objective of this club is not only to allow the students to simulate position trading — but also to simulate day trading and arbitrage trading — it is necessary for them to have access to tick-by-tick price quotations.

The purpose of this article is to describe the spreadsheet utilized to maintain the accounts of simulated trades. Sample output is provided.

The Trading Game Template

The spreadsheet described in this paper was prepared with Apple Works on an Apple IIe; the microcomputer is equipped with an expander card to increase the RAM to 349K. Although this spreadsheet was set up with Apple Works, almost any spreadsheet program could be used.

Figure 1 displays the spreadsheet fields, while Figure 2 describes the column width and input of each field. Field A designates whether the trade results in an open futures position, or is an offsetting trade. An open position is coded as "1", and an offset position is coded as "0".

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