

TOWARD DEVELOPMENT OF AN OBJECTIVE METHODOLOGY
FOR EVALUATING PERSONAL FINANCIAL PLANNING
MICROCOMPUTER PROGRAMS

By

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PREFACE

This research focused on the development and application of a methodology for objectively evaluating certain personal financial planning micro-computer programs. The standard for evaluating the programs is distilled from concepts in personal finance literature.

I extend deep appreciation to my doctoral committee members for their guidance throughout the learning process, but most especially at the outset of the research study. Dr. Carl Hall, Head of the Department of Housing, Interior Design and Consumer Studies who served as doctoral adviser, Dr. William L. Johnson, Professor and Director of the Center for Consumer Services who served as dissertation adviser, Dr. Margaret Weber, Professor, Housing, Interior Design and Consumer Studies, and Dr. Althea Wright, Associate Professor, Family Relations and Child Development.

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CHAPTER I

INTRODUCTION

Financial Planning Environment

Wilhelms (1974) observed that in recent years consumer goods and services have become available in an unprecedented volume and variety; consequently, judging their quality has become more difficult. Deregulation of financial services has exemplified this situation for consumers through the creation of multiple options in saving, investing and borrowing (Hudson Strategy Group, 1982, Rosefsky, 1985, Hoffman and Brobeck, 1986). Technological innovation in communications has increased the volume of information and the number of media channels in much the same way (Naisbitt, 1982). The convergence of these trends presents additional choice problems for consumers, especially as financial services are impacted by the new technology of the microcomputer. Reactions to this complex, information-abundant financial services marketplace have taken several directions.

One of the earliest responses was the expansion in both number and type of financial counselors or planners ("Financial Planners: What Are They Really Selling?," 1986). In addition to the large number of independent financial planners, many insurance companies, investment firms and other large financial service institutions have marketed low-cost planning services to a wide consumer segment ("Computerized Financial Plans: How Good?" 1985, Bulkeley, 1985). The competence, objectivity and value of

financial planner guidance appears open to scrutiny (Williams, 1984, Slater, 1985) Stephenson (1984) noted a wide array of advice givers in one or more areas of financial planning and management who claimed special expertise but failed to deliver unbiased, quality service One assessment of mass-marketed financial planning services reported that planners provide widely varying results despite being given the same set of financial circumstances Of note was that each of the plans " almost always reflected the primary business of the company designing the plan" ("Looking for Mr Goodplan", 1986, p 39)

Another response to financial complexity and consumer confusion was the growth of self-help materials, principally printed media Financial advice was long a staple of such magazines as Changing Times and the nonprofit publication Consumer Reports, but new ones such as Money began to appear in the early 1970s Books dealing with the broad spectrum of financial planning were published in increased numbers, beginning in the middle 1970s (Porter, 1976, Rowse, 1977) More specialized books such as The Only Investment Guide You'll Ever Need (Tobias, 1983), as well as pamphlet series, for example, the No-Nonsense Financial Guides (1984), became available by the middle 1980s An extension of this trend was the publication of books in electronic form using audio tapes (Hecht, 1982) These allow the busy consumer to listen to a book while driving or doing some other task (Davis, 1984) Examples of personal finance books on tape available through bookstores were How to Talk Money (Crowe, 1985) and Moneylove (Gillies, 1985)

Computer programs for home use was the most recent self-help response to increased complexity in managing personal finances This has been made possible by the availability of many different brands of relatively powerful microcomputers for personal use in the home (Toong and Gupta, 1982)

Declining prices of computers, printers and video displays accelerated the spread of this high technology. The home computer, once a few fundamentals were mastered, provided many consumers with the ability to perform a variety of tasks more quickly and efficiently than previously possible ("What Home Computers Can Do," 1983). The microcomputer offered great potential as an avenue to cope with the revolution in financial services, however, it brought additional variety and complexity along with its potential. Much of the complexity centered on the proliferation of application software programs.

The marketing of software programs for personal finance has followed the explosive growth in microcomputer ownership ("How Our Readers Are Using Computers," 1983). Besides questioning the quality of financial planning services, there have been similar reservations expressed about the quality of information supplied via the new high technology modes (Jones, 1982). Moreover, the usefulness and cost effectiveness of performing personal financial tasks on a microcomputer has been challenged. The suggestion has been made that a pocket calculator and pencil would do as well or better than a microcomputer for many tasks ("Your Home Computer as Home Accountant," 1984). In the context of personal finance, one expert in computing suggested that the consumer might simply be purchasing a better shoebox for saving receipts (Espinosa, 1986). Nevertheless, the convergence of the two trends, the powerful microcomputer with its programs and the deregulation of financial services, set the stage for the microcomputer to become useful in dealing with multiple financial choices.

Nature of the Problem

A large selection of microcomputer programs was available to help consumers with some aspect of financial planning by the middle 1980s. The

programs ranged in price from \$5 00 to many hundreds of dollars and in purpose from performing a single task to multiple functions. One listing of home finance software ("The Software and Accessories Directory," 1985) included at least 10 different programs available for three different brands of microcomputers. Bartimo (1985) compiled a more extensive list containing over 75 programs available for more than a dozen different microcomputers. Another source claimed that more than 500 programs were available concerning some aspect of personal finance (Goodman and Brevdy, 1984). Most, if not all, of the higher-priced programs were reviewed in several popular computer magazines readily available to consumers via subscription or retail magazine outlets.

Methods of evaluating personal finance programs varied as widely as the number of reviews. Some provided detailed analysis, pointing out specific strengths and weaknesses, while others were brief and general. A few used a rating scale, but many did not. The reviews provided essentially subjective assessments and few of them critiqued potentially competitive programs on a comparison basis. There was another problem associated with the reviews in addition to the factors cited. As quoted in a Wall Street Journal article, the editor of a microcomputer newspaper suggested that consumers should place little confidence in most program reviews because "'With few exceptions, you can't trust any of the reviews. There's not a great deal of integrity in computer journalism'" (Bean, 1986, p. 190). As a result, consumers still had to deal with considerable uncertainty about what constituted a functional personal financial planning software program appropriate to their differing needs.

The wide variation in program evaluations existed in part because assessment was not based on an established standard or benchmark drawn from the consumer financial education field. This circumstance was in contrast

to assessments of computer hardware, reviews of microcomputer programs were less well documented than evaluations of microcomputers, printers and other hardware. Customarily, the reviews of many different types and brands of hardware such as computer printers in Byte microcomputer magazine included comparative data on competing models (Swearengin, 1986)

The overall situation suggested that there was a need to develop an objective evaluation method of assessing personal financial planning microcomputer programs. The application of such a method to create evaluative reports would provide consumers/users with objective comparative information on which to base purchase decisions.

Purpose of the Research

The purpose of the research was to design and validate a quantitatively-based methodology for objectively evaluating personal financial planning microcomputer programs. Concepts which might logically be expected to be addressed in a quality personal financial planning program were synthesized from the literature and used as a benchmark for evaluation. Validation was accomplished by applying the methodology to a selected sample of existing programs available on the open market.

It was assumed that validity of the methodology would be established if the following questions could be answered by the evaluation procedure:

1. Can the methodology identify the relevant personal financial planning concepts and the extent to which they are covered in each selected program's documentation?

2. Can the methodology assess the extent to which each personal financial planning concept is implemented in each selected program's software?

3 Can the methodology provide quantitative data for comparison of programs concerning the extent to which the relevant personal financial planning concepts are addressed in the documentation and implemented in the software?

4 Can the methodology provide a system for classifying the subtypes of personal financial planning programs based on concept coverage and/or concept implementation in the selected programs?

Assumptions and Limitations

Many personal finance programs were written for several brands or models of computers. It was assumed that programs designed for one computer would contain essentially the same features and would function comparably when adapted for operation on other brands of computers.

A major assumption was that the reader and much of the general public would be reasonably familiar with the common terms used in microcomputing. That assumption was made to avoid producing an extensive glossary of terms and definitions, since many such glossaries have been published in consumer magazines ("A Guide to Compuspeak," 1983), educational materials (Scannell, n.d.), computer books (McWilliams, 1983) and dictionaries (Downing and Covington, 1986). If a term was deemed to need clarification for the study, the researcher provided a definition.

The research sample of financial planning programs was limited to programs which would operate on an Apple //e computer system, using either the Disk Operating System (DOS) 3.3 or Professional DOS (ProDOS) operating systems. The Apple //e central processing unit was equipped to provide a standard 80 column display and had a total random access memory capacity of 128 kilobytes. The system included an Apple disk II drive and one Micro-Sci A2 disk drive, a Grappler+ parallel printer connection to an Epson

FX-85 printer, a System Saver surge protection power switch, an Apple Monitor III video display and an Amdek 300 color video monitor

A further research limitation was dictated by limited funds for program acquisition. The researcher set an approximate limit of \$500 for personal finance programs. While that amount might preclude higher-priced programs of presumably greater capability, a preliminary examination of program prices indicated that many of the most widely used programs could be acquired within that dollar limitation ("The Winners of the 1985 A+ Readers' Choice Software Awards," 1985, "Announcing the Winners of the 2nd Annual A+ Readers' Choice Awards," 1986, "The Best-Liked Software," 1985, "75 Best Sellers," 1985, "Best Seller Charts," 1985, "Best Seller Charts," 1986)

Definitions

The following are definitions applicable to this study

Applications Program An applications program is the instruction materials and software designed for a particular use (a personal financial management program or a word processing program) ("A Guide to Compuspeak", 1983)

Documentation Documentation, as used in the study, is the printed instructions concerning the software, including the reference manuals, tutorials and reference cards designed to help the consumer/user learn and use the software ("A Guide to Compuspeak," 1983, Downing and Covington, 1986)

Integrated Software Software which includes several application functions and allows transfer of information among the functions (Downing and Covington, 1986)

Module A module is a part of a larger software program that performs a particular task or set of tasks (Downing and Covington, 1986) In the context of this study, a module is defined as a part of the software that performs a particular task or function such as recording information about income and expenses

Software Software includes the instructions and data contained on diskettes in magnetic form which direct a microcomputer to perform specific tasks (Downing and Covington, 1986)

Summary

The emphasis on deregulation of banking and financial services and the vigorous marketing of new financial products and services created new challenges for consumers in the area of personal financial management by the middle 1980s Consumers were challenged by the complexity of many brands of microcomputers and application programs The development of relatively low-cost microcomputers and increased availability of personal finance programs offered the potential for helping consumers deal effectively with money management in an era of a deregulated and product-proliferic financial marketplace

The consumer's problem in using the new techniques was the confusion created by the variety of microcomputer programs marketed as the solution to personal finance management The programs appeared to offer a profusion of capabilities at varying prices Software programs were reviewed and examined in many periodicals. The reviews generally failed to delineate and compare the capabilities of a program with other comparable programs Further, the basis for evaluating programs was subjective to the reviewer since there was no overt standard used for comparison

It was inferred that established consumer education concepts could serve as the basis for an overt standard by which personal finance micro-computer programs could be analyzed and compared. The purpose of the research was to design and validate a methodology for evaluating personal financial planning microcomputer programs

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Numerous personal finance software programs have been produced for the home microcomputer market to help consumers deal with an increasingly complicated financial marketplace. The volume of programs available, coupled with the lack of a standard for evaluation, contributed additional uncertainty and confusion for consumers. This indicated a need for development of a method to evaluate personal financial planning microcomputer programs based on established personal finance planning concepts. This study was undertaken for the purpose of developing a program evaluation methodology. Two goals were stated for the review of literature to meet the purpose of the research.

Personal Financial Planning

The first goal of the literature review was to inventory selected consumer educational materials to identify a standard or core of established personal financial planning concepts and to state their operational software features for the research. Synthesizing a standard was problematic, since the consumer movement and consumer education in the United States developed neither a centrally controlled bureaucracy nor an orthodoxy that could be enforced (First National Consumer Education Roundtable, 1985; "Consumerism Growing Through Diversity," 1985). Both as a movement

and an educational effort, consumerism has been characterized by considerable variation in perspective which was evident in the consumer education materials that were consulted (Aaker and Day, 1982, Consumer and Economic Education Recommendations for Policymakers, 1982). Reflective of the variety historically inherent in consumerism, each education source reviewed gave a unique interpretation of personal financial planning components. It was necessary, therefore, to examine several sources to develop a useful financial planning conceptual outline.

Four Perspectives

Wilhelms' (1974) pragmatic philosophical monograph on consumer education was chosen as the starting point to identify a conceptual boundary for personal financial planning. At the broadest level, Wilhelms stated that consumer education was constructed on the twin foundations of buymanship and money management, with a planning or budgeting process inherent in each and serving as a coordinating link between them. Besides budgeting, Wilhelms listed six concepts which he felt rested on the cornerstone of financial management: money mechanics, insurance, credit, savings, investment and consumer law. He restated, for greater clarity, these components of personal financial planning:

- * Skill in the sheer mechanics of storing and handling money
- * Sophistication in the use of insurance to offset risks
- * Competence and wisdom in the use of credit
- * The disposition and ability to save
- * Sound ability to invest appropriately
- * Ability to use the law as a protective shield (p. 12)

An earlier outline of personal financial management ideas was very similar to Wilhelms' (1974) viewpoint. That work, Consumer Education in Your School: A Handbook for Teachers and Administrators (1947) (hereafter cited as Handbook), listed five major concepts:

- a. Budgeting
- b. Money Management
- c. The use of consumer credit
- d. Planning the insurance program and buying insurance
- e. Investments (p 46)

There were some differences between the two conceptual structures. The first was the Handbook's (1947) omission of consumer law as a financial management concept. The researcher concurred with the omission, since consumer law was appropriate to the spectrum of consumer education, that is, law could be equally applicable to the buymanship aspect and was not solely tied to financial planning. Another difference was the absence of savings from the Handbook list. Savings was retained as a concept, since it was viewed as a necessary precursor to investment. Lastly, the concept labeled as money management in the Handbook was considered to be essentially a different name for the mechanical functions identified in Wilhelms (1974) discussion under the label of money mechanics.

A more recent study provided a relatively comprehensive summary of consumer education concepts from many different sources. As background for her research on consumer education at the secondary school level in Oklahoma, Hearn (1980) examined the concepts in a variety of consumer and economic education materials. Hearn based her work on Trujillo's (1977) model of economic education and consumer education concept learning sequences. From that model, Hearn used 26 concepts to study the content of various consumer education materials. Her survey of 20 secondary and college textbooks showed the most common concepts were. Insurance, Credit, Budgets as Plans, Planning, Tax Planning, Estate Planning, Financial Records, Borrowing, Consumer Resources and Consumer Rights and Responsibilities. In addition to textbooks, Hearn looked at 13 curriculum guides, attitudinal surveys and research studies, with the finding that the most frequently listed concepts were. Credit, Insurance, Budgets as Plans,

Decision-Making, Buymanship, Rights and Responsibilities and Goals and Values. The extensive data tables developed by Hearn from content analysis of the materials are reproduced as Appendix A to this study. After filtering out the economic education topics, Hearn arrived at the following general list of 10 consumer education concepts:

- Planning, Budgeting and Financial Record Keeping
- Buymanship Skills
- Advertising
- Goals and Value Clarification
- Borrowing and Credit
- Insurance
- Savings and Investment
- Tax Planning
- Decision-Making
- Consumer Rights and Responsibilities (p. 33)

The consumer education concepts of buymanship, advertising, goals and values clarification, decision-making, and consumer rights and responsibilities from Hearn's (1980) list were outside the bounds or not limited to the financial planning function and were discarded from further consideration. Budgeting, borrowing and credit, insurance, and savings and investment were approximately the same as the previously identified by Wilhelms (1974) as the Handbook (1974). Two concepts were considered for addition to the list: tax planning and financial record keeping. Record keeping was viewed, however, as an element or subconcept of money management mechanics (Wilhelms, 1974, Handbook, 1947).

The final perspective used in developing a framework was a monograph on consumer education concepts which followed the general pattern set by Trujillo (1977). Under a U.S. Office of Education contract, Bannister and Monsma (1982) devised a scheme for classifying consumer education concepts. Their system also served as a convenient means to concisely summarize many elements of financial planning. Their definition of financial planning was that it involved a process of managing financial resources.

after considering goals, needs and available resources Bannister and Monsma included these concepts.

- a Spending Plan
 - 1) Record Keeping
 - 2) Budgeting
- b Borrowing
 - 1) Credit Agreements
 - 2) Credit Sources
 - 3) Credit Costs
 - 4) Credit Rating
 - 5) Credit Cards
- c Saving
- d Investing
- e Protecting
 - 1) Life Insurance
 - 2) Health Insurance
 - 3) Property Insurance
 - 4) Automobile Insurance
 - 5 Social Security Insurance
- f Taxpaying

For this study, it was determined that obtaining income would be omitted under the assumption that financial resources, regardless of origin, were available for management and would be considered within the income element of budgeting. Otherwise, the taxonomy's major concepts of spending planning, borrowing, saving, investing, protecting, and taxpaying were essentially the same as those previously noted in the discussion. It was noted, however, that the classification system--as did Wilhelms (1974)--listed saving and investing as discrete concepts. Hearn (1980)

listed the concepts together, while the Handbook (1947) did not specifically list savings as a financial planning concept. Lang and Gillespie (1984) and Rosefsky (1985), among others, made little distinction between the two, Deacon and Firebaugh (1981) tended to suggest the difference between saving and investing was a matter of degree and purpose. It was decided to collapse the two labels into one general concept.

A Preliminary Synthesis

Despite diversity in perspectives noted among the four sources, it was concluded that a core of financial planning components was identifiable for the research. The differences were viewed largely as matters of emphasis that varied according to the particular context and needs underlying the reports. The earlier work of Wilhelms (1974) and the Handbook (1947) provided the philosophical starting point for sifting through the myriad of possible consumer education concepts. Hearn's (1980) application of the Trujillo (1977) model further served to distill major consumer education concept areas. Bannister and Monsma's (1982) classification was the final filter. Their conceptualization of financial planning as "The establishment of goals and procedures for the use and conservation of financial resources" was especially germane in determining the final set of appropriate concepts (Bannister and Monsma, 1982, p. 29). A core of six consumer education concepts identified as essential to effective personal financial planning was found to be shared in the four perspectives. These six concepts, therefore, which might logically be expected to be addressed in a quality personal financial planning program, were adopted as the benchmark for evaluation.

- 1 Budgeting
- 2 Credit

- 3 Insurance
- 4 Saving/Investing
- 5 Money Mechanics
- 6 Taxpaying

Software Evaluation Approaches

The second goal of the review was to survey approaches used in evaluating microcomputer programs. This goal was pursued in the context outlined by Brand in the Whole Earth Software Catalog for 1986 (1985), hereafter cited as The Catalog.

Software is a new enough kind of thing in the world that humans are still figuring out how to deal with it. Though it can be bought and sold, you can't see, hear, touch, taste, smell, eat, or burn it. On an unlovely artifact called a disk may be hidden the concentrated intelligence of thousands of hours of design, for which you are expected to pay hundreds of dollars, and which you can reproduce on your own computer with perfect fidelity (p. 4).

Little research concerning microcomputer systems or commercial software has been published in professional consumer education journals. Dickerson and Gentry's (1983) research, for example, surveyed the characteristics of computer owners and nonowners. Unpublished studies have dealt with the perceptions of consumers in selecting microcomputers (Brodrick, 1984) and the issue of privacy with interactive systems (Kautz, 1984). Only one brief mention in a professional source was noted specifically concerning financial planning programs (Lee, 1986). In nonprofessional publications, there has been one survey of programs, conducted by Consumer Reports ("Software Survey," 1985) to determine the benefits consumers perceived from varying types of programs including personal finance. The programs were subjectively rated on ease of use and overall satisfaction with dimensions such as documentation, reliability and value for the money.

No intensive investigation of features or capabilities was incorporated in the survey instrument. In view of the limited data, attention was directed towards other areas for information about evaluation methods.

Computer Publications

Guidance about what programs to buy is furnished in many different sources ranging from general books and catalogues to magazines targeted at the users of one computer brand. This presents consumers with a changing and prolific information maze. The disappearance of publications such as Softalk (1984) and Creative Computing (1985) and the creation of new ones, for example, II Computing (1985), is one indication of this. The vast number of software programs result in other problems as updated versions of existing products are released and new programs enter the market. Hard-bound books and annuals (for example, The Personal Computer Book, McWilliams, 1983 and the A+ Buyers Guide, 1986), can become out-of-date in a relatively short time. Personal finance and computer magazines tend to be more current in product coverage. Their limitation has been to either summarize a great many software programs in little detail or provide space to examine only a few programs at some length (Goodman and Brevdy, 1984, "Software That Does the Hard Work," 1986).

Reflecting some of the confusion surrounding microcomputer programs as well as the field of personal finance has been an apparent inability to classify personal financial management software programs under a consistent label. One publication (SoftGuide, 1985) listed ostensibly similar programs such as Managing Your Money (1985) and Your Personal Financial Planner (1984) as home finance and lifestyle/personal productivity programs, respectively. Other terms have included home information systems (A+ Buyers Guide, 1986) and home accounting ("The Best-Liked Software," 1985).

A Cautionary Note

In sifting through claims for new software, a skeptical attitude is more important than electronics expertise. Much of the information about software is slanted. Retailers often push high-priced programs, experts suggest elementary ones and computer magazines tout nearly all of them (Davis, 1985b, p. 19)

An article in Changing Times similarly recommended that consumers accept software reviews with caution because many reviewers were uncritical and excessively enthusiastic about most programs. The general practice had developed in the trade to say little that was negative about any products ("A Hard Look at Software Reviews," 1986). Possibly indicative of the need for skepticism was the difference noted between the results of a Consumer Reports survey and reports in two microcomputing magazines concerning personal finance programs. Two personal finance programs were rated by Consumer Reports readers with one (Dollars and Sense, 1984) receiving favorable reports from approximately three-quarters of its users. The other program was rated much less favorably by users, who reported that it had poor documentation and was unreliable. The latter program Home Accountant, "distinguished itself by satisfying fewer than half its users--the lowest level of satisfaction of any software package in the survey" ("The Best-Liked Software," 1985, p. 562). In contrast to those results, two periodicals devoted to Apple computers reported Home Accountant with a different result. One had it at the top of the sales list ("Best Seller Charts," 1985), while the other magazine reported it as the most popular personal finance program with Apple owners ("The Winners of the 1985 A+ Readers' Choice Software Awards," 1985).

Implicit Criteria Reviews

Many sources, principally magazines, failed to define any evaluation

criteria, their reviews basically were subjective descriptions of the programs. Some feature articles discussed how different personal finance programs were used by consumers but avoided negative comments (Fersko-Weiss, 1985). Other reports included criticisms of several widely advertised programs (Davis, 1985a). Articles in a number of Apple-specific publications were more catalog description than assessment, possibly a necessity since each covered nearly a dozen financial software products (Malnig, 1986, "Personal Finance Software," 1985).

Some evaluations focused on technical performance of the software, that is, judging how well a program ran and how easy it was to use from a procedural standpoint such as whether there were suitable explanations of procedures either in the software or the instruction manual or how much data could be stored, sorted, and categorized (Armstrong, 1986, Guerra, 1986). In other reviews there were detailed comments about performance features tied to specific personal finance components (Glau, 1986). It was noted that direct comparisons between approximately similar personal finance software programs generally were avoided in the reviews of individual products.

Unlike many of the publications, A+ magazine generally has used the same reviewer for money management programs over several years (Landis, 1984, 1985, 1986). Even though no criteria were stated there was a potential for consistency in evaluating this type of program. The general enthusiasm in reviews and lack of comparative assessment did not necessarily imply an uncritical acceptance of software programs, since many reviewers did find fault with programs (Glau, 1986, Guerra, 1986). Nevertheless, the reader generally was confronted with a subjective mixture of information.

Explicit Criteria Reviews

A developing pattern for microcomputer program evaluation in some computer publications has been the explicit statement of evaluation criteria. Highly generalized criteria for evaluating programs was furnished by Brand (1985) in The Catalog. He said that good software does an important job well, does not intrude on the user, has layers of features, blends with other programs, is well supported, is not protected against duplication by the user; and is reasonably priced. Those criteria, however, were not overtly applied to five personal finance programs in another section of the publication, evaluation was limited to a few paragraphs of opinion offered by several reviewers. Uncharacteristic of many computer publications, The Catalog reviewers did make direct, brief comparisons between the various software programs.

One Apple-specific magazine, inCider, used different reviewers for competitive personal finance programs (DiBara, 1985, Norman, 1985, Field, 1986). It evolved an overt rating system to which consumers would refer for summary information to use in making comparisons. In mid-1985, a software reviewer for inCider could assign one of five overall ratings to a program: four stars--superlative, three stars--above average, two stars--good, one star--not recommended, no stars--stay away ("inCider's Ratings," 1985). In 1986, the magazine's reviewers had essentially the same but renamed set of ratings which could be applied to five different aspects of a program: Ratings were retitled: excellent, above average, good enough, not up to standards and the empty set. They could be assigned to five evaluation areas: ease of setup, ease of use, documentation, support, and the overall performance of the program. No detailed description of the five areas was provided from issue to issue ("inCider's Ratings," 1986).

A more detailed rating system is used by Infoworld (1986), a weekly microcomputer newspaper. This system has seven categories: performance, documentation, ease of learning, ease of use, error handling, support, and value. A reviewer can assign one of five ratings to each category. The highest rating is excellent for the best program in its class to the lowest rating of unacceptable for programs that fail to meet minimum standards. Moreover, the paper publishes the definitions of the ratings in each issue, along with a notice that it reviews only final production versions and not preliminary test versions of programs that have not reached the market.

Personal Finance Software Criteria A number of computer periodicals provide selection criteria concerning personal finance programs. Perhaps this flows from Glossbrenner's (1984, p. xx1) book that was "designed to give you everything you need to know to be a successful software buyer." Glossbrenner classified personal finance programs into three major categories: checkbook balancers, computerized budget and personal/home accounting. Thereafter, he outlined buying checklists for each type under the generic titles of capacities and capabilities, ease of use, checkwriting, and reporting.

One article provided a subjective and still very general checklist that included questions such as: does the software reflect the kind of person you are, how much time will operating the program take, does it have features that meet your needs, and do you enjoy using it (de Peyster, 1986).

A special report in Infoworld, "Packages Prove You Get Your Money's Worth" (Crabb, 1986), examined seven personal finance programs and their performances using several different microcomputers. In one major departure from the norm followed by many computer periodicals, this report

made direct comparisons among the software programs concerning major features. The second key point in the report was the identification of personal finance functions that should be expected in a full-feature program

. . . automation of the dreariest aspects of personal money management, including checkbook reconciliation and check writing (for one-time and recurring expenses), handling a wide variety of accounts (such as checking, savings, IRA, cash, credit card); monthly and yearly budgeting (comparing actual to budgeted expenses and incomes), the capability to split individual transactions across accounts, accumulation of tax-sensitive information (like tax-deductible expenses and taxable income amounts), generation of all kinds of financial reports (including graphs) that report your assets, liabilities, net worth, current and projected cash flow, and budget projections, some kind of automatic communications function to allow retrieval of financial data from another computer (Crabb, 1986, p 31)

Other Evaluation Materials

Additional sources were explored briefly for suggestions potentially applicable to software program evaluation. One was "A Guide for Evaluating Consumer Education Programs and Materials" (Lucht, n d). Although not specifically designed for computer programs, this American Home Economics Association publication listed 18 criteria for judging educational materials. It included an excellent-to-poor rating scale with detailed definitions of the scale for each criterion. Among the criteria were

1. Relevancy--the relationship to real situations
2. Timeliness--the information used is current
3. Organization--ideas are logically developed
4. Objectivity--does not have a product bias
5. Source Credibility--uses accepted theory or authority
6. Directions--methods for use are clear and understandable
7. Packaging--is durable and easy to store
8. Cost--price is commensurate with value

Many other review resources have been developed for use in the educational field (Robinson, 1982, The 1985 Educational Software Preview Guide, 1985) One commercial publication used five general criteria with a weighted-point scale for educational software program evaluation Rating points were given as a percentage of the grade for a program item as follows Documentation (10%), Ease of Use (25%), Program Content (25%), Instructional Technique (20%), Educational Usefulness (20%) (Software Reports, 1984)

There is a lack of consensus on program assessment in publications aimed at both the home and the educational software program user Even where criteria are widely used in assessment approaches (for example, ease of use), they rely on subjective judgments about what is easy and what is difficult This suggests that evaluative criteria need to be explicitly stated, that they be objective in nature and that they be consistently applied to similar programs under scrutiny This conclusion pointed towards an assessment process which focused on the contents and related characteristics of personal financial planning programs that could be objectively measured using a benchmark in consumer education

Summary

The review of the literature had two goals The first goal was to identify a standard of personal financial planning concepts and then to state the standard in terms of operational software program features The second goal was to look at methods used to assess microcomputer programs

Consumer education materials provided little agreement concerning many of the details involved in personal financial planning, but did appear to have many concepts in common Using those established concepts as a guide,

a preliminary synthesis of six core concepts was identified from the sources

Concerning program evaluation methods, wide variations in approach were noted in computer publications available to consumers. It was suggested by several sources that program reviews should be read with skepticism since there was a tendency to stress positive elements and a reluctance to mention possible drawbacks. Many publications did not explicitly state their program review criteria and many did not provide comparative information on competitive programs.

A developing pattern has been to use overtly stated criteria and a Likert-type rating system. In addition, some publications make by-name comparisons of competitive programs and note negative points as well as positive features of programs. Some educational microcomputer program review sources were consulted for additional information. It was determined that there was no consensus on methodology for conducting the assessments and that many explicit criteria were open to interpretation.

It was concluded that there was a need for a methodology using overt content-oriented criteria which were systematically applied to competitive software programs and with the results reported in standard formats to provide a quantitative base for qualitative consumer decision-making.

CHAPTER III

METHODOLOGY OF THE RESEARCH

Introduction

Relatively inexpensive home microcomputers and personal finance software programs offer consumers many new possibilities for effective financial management in an era of a deregulated and complex financial services marketplace. The profusion of personal financial management microcomputer programs being marketed and the deficiencies in published evaluations of the programs add to consumer confusion.

The purpose of the study was to design an evaluation methodology concerning personal finance planning microcomputer programs. This chapter outlines the methodology for the research to include the type of design, the development of the methodology, the development of the data collection instrument, the data analysis process and the definition of the software program population and sampling plan.

Type of Research

Research concerning microcomputer software programs of the kind proposed for this study was not identified in either academic or popular consumer research publications. This indicated a need to develop suitable research techniques concerning microcomputer software programs. The type of design proposed for this study was descriptive.

Before much progress can be made in any field, scholars must possess descriptions of the phenomena with which they work.

. investigators ask the question What exists seeking accurate descriptions of activities, objects, processes, and persons--is their objective (Van Dalen, 1979, p 284)

Adams and Schvaneveldt (1985) supported this functional perspective, commenting that descriptive research has the main goal of accurately profiling persons, events, or objects. Further, they noted that a variety of methods may be appropriate to the design of a descriptive study and may involve interpretation, contrast, classification and integration of findings.

As was indicated in the review of literature in Chapter II, personal finance programs have been described, assessed and reported according to various subjective patterns. This may be due to the unconventional form in which information exists in microcomputer software programs (Brand, 1985). While each form of media presents its own research problems, it seemed that microform media, that is, photographically reduced information, provided a conceptual analog useful to further defining the research procedure (Cabeceiras, 1982). The microform of a personal finance book can contain the information content of the book but requires special equipment to gain access to the information. Similarly, a personal finance microcomputer program contains information but requires special equipment to gain access to the content. It was logically determined that microcomputer software programs were social artifacts similar to books and, therefore, content analysis was a suitable descriptive research technique (Babbie, 1986). An application of content analysis to consumer education by Cunningham and Miller (1985) using the Bannister and Monsma (1982) classification system as a standard served as an approximate model for this study. Van Dalen (1979) stated that content analysis was useful in asking questions about similarities and differences between authors, reports, textbooks, curricula

and similar works, as well as the extent to which the content meets a specified standard

For information in complex media forms, the phenomena can be segmented into units of analysis, sampled, and each unit coded and recorded in analyzable form (Krippendorff, 1980) According to Krech, Crutchfield and Ballachey (1962), content analysis has several general component steps which permit an objective, systematic, and quantitative description of manifest content.

The content analyst first defines the universe of population next selects the units of analysis to be used in counting content elements The unit may be the word, the sentence, the paragraph, or the item, i.e. the entire textual unit The next and most critical decision the analyst must make is to choose appropriate analytic categories Categories that have been used include subject-matter categories, pro-con categories, value categories, etc Qualitative or interpretative analysis is sometimes used to illuminate or supplement quantitative findings (pp 360-361)

Development of the Methodology

The preliminary synthesis of established personal financial planning concepts was stated in the previous chapter While providing a general standard, the framework required more elaboration to serve as a practical basis for evaluating microcomputer programs The determination of what tasks could be operationalized and measured in microcomputer programs was necessary

Several resources were reviewed to provide a basis for determining how personal financial planning programs would be useful This aspect examined features or tasks that could be expected in the core financial planning concepts Some general guidance was supplied by Ezell's (1984) overview of how microcomputers are useful in personal finance

Computers are suited to

- 1) problems that are logical, involving an easily understood sequence of steps that reach a final solution,
- 2) problems that when given the same inputs will develop the same outputs, and
- 3) problems that benefit from increased speed of calculation, data retrieval or both

The problems that are suitable for computers include the cost of driving an automobile, the cost of food items per year, calculation of total interest on a loan, and budget analysis programs. Problems that are poorly suited to the computer are those that require intuition and judgment or that have multiple answers to the same inputs (p 207)

Supportive of this, Dlabay (1984) named credit costs, home financing costs and investment alternatives as some tasks appropriate for personal finance programs. Similarly, Hafstrom (1985) reported that personal financial management programs often possessed modules on budgeting, accounting, investment portfolio record keeping, scheduling, and personal property records. Hafstrom further observed that:

The main advantages of these programs are that data can be stored, manipulated, and then retrieved. Changes can be made in budget categories. Some programs allow you to get a budget report that compares actual with projected expenditures for each month. Another useful feature is the ability to automatically write checks, thereby reducing the monthly check-writing task (n p)

The operational benchmark for the methodology was defined, therefore, as the following features and capabilities contained in a microcomputer program which would assist the consumer in realizing the financial planning concept.

Budgeting

Lang and Gillespie (1984), principally chapters one and three of the third edition of their book, Strategy for Personal Finance, was used as the primary source to define the implementation of the budgeting concept.

Their treatment was considered representative of the process based on a comparison of texts by Schiller (1981), Miller (1984) and Rosefsky (1985). The tasks required to apply this concept included stating planned or estimated amounts of income available and expected expenses, usually in monthly increments for a one-year period. Categories were needed to specify source of income, required deductions and voluntary deductions to determine available income. Sufficient expense categories were required to provide for regular monthly living expenses and once or twice yearly expenses plus expenses for savings and investment goals. A budget summary providing a comparison of planned with actual information by month, possibly by quarter, and for the entire year was required. Another desired feature of the budget summary was computation of the difference between income and expenses to reflect cash flow position. It was determined that four tasks for estimating income, three tasks for estimating expenses and two tasks for summarizing budgets should be implemented in a quality microcomputer program. Each of the following budgeting tasks, if present in a program, would be valued as one point.

| | Points |
|-----------------------------|--------|
| 1 Estimate income | |
| a Sources and Gross Amounts | 1 |
| b Mandatory Deductions | 1 |
| c Optional Deductions | 1 |
| d Computer Available Income | 1 |
| 2 Estimate Expenses | |
| a Regular Living Expenses | 1 |
| b Occasional Expenses | 1 |
| c Saving/Investing Expenses | 1 |

| | Points |
|----------------------------|--------|
| 3. Summarize Budget | |
| a Planned--Actual Data | 1 |
| b Calculates Net Cash Flow | 1 |
| Total Points | 9 |

Credit

Of the five elements Bannister and Monsma (1982) listed as part of the borrowing concept, the cost of credit was most adaptable to manipulation by computer. For consumer cash and sales installment loans, determination of cost included annual percentage rate (APR), number and frequency of payments, maturity of the credit contract, amount financed and total credit cost (Lang and Gillespie, 1984). The poorly understood and complicated Rule of 78's or sum of the digits method for computing a so-called rebate of finance charges on an installment loan was a desired feature (Epstein and Nickles, 1981, Schiller, 1981). For open-end or revolving credit, the determination of borrowing costs included application of the periodic finance charge to any of three possible methods for computing the finance charge: the previous balance, the average daily balance, or the adjusted balance (Lang and Gillespie, 1984, Consumer Education and Family Finance, 1978). A summary report which stated the comparative costs for a number of alternatives in both closed-end credit and revolving credit was desired. In addition, a capability for generating amortization schedules to compare various interest rates, dollar amounts, payments, and maturities for mortgages and other loans was desired (Lang and Gillespie, 1984). It was determined that three tasks concerning cash or sales loans, one task for the Rule of 78 Rebate Penalty, three tasks for revolving credit, and one task concerning production of a loan amortization table should be

implemented in a quality microcomputer program. The presence of each of the following tasks would be valued at one point for the implementation of the credit concept:

| | Points |
|---------------------------------------|--------|
| 1 Cash/Sales Loans | |
| a Calculates APR | 1 |
| b Calculates Payments | 1 |
| c Calculates Total Cost | 1 |
| 2. Rule of 78 Rebate Penalty | 1 |
| 3 Revolving Credit | |
| a Previous Balance | 1 |
| b. Average Daily Balance | 1 |
| c Adjusted Balance | 1 |
| 4 Produces Loan Amortization Schedule | 1 |
| Total Points | 8 |

Insurance

Life Insurance In the second edition of their text, Lang and Gillespie (1981) noted two accepted methods for deciding how much life insurance an individual required, the life value method and the needs approach. The former was criticized as an oversimplification which did not account for the unique circumstances of the individual household. The latter method was considered more realistic and was the only one discussed in the third edition of their text (Lang and Gillespie, 1984). The needs method, based on lifestyle and lifecycle circumstances, was used by others such as Schiller (1981) and Chasen (1983). Hunt (1984) continued to use a variation of the income-based method but included provisions to adjust for differing family circumstances. It was decided to include the needs approach as a

means to calculate life insurance needs. In addition, it was decided to include analysis of life insurance costs using the formula and guidelines developed by Belth (1982, 1985) concerning cash value life contracts and cost data based on Tobias (1982) and Hunt (1984) for term life contracts.

Casualty/Liability Insurance The amount of insurance necessary to protect against casualty loss to a home was determinable by 80% of replacement value. Subsidiary coverages for personal property, medical payments and liability were based on percentages of the dwelling coverage. Increased coverage for personal property could be based on full replacement value of the property, provided records were maintained. Increased coverage for liability could be provided with homeowner and/or automobile policies. Aside from the calculation of home replacement value, the process in this area of homeowner, liability, automobile and other property-related types of insurance focused on buymanship (Lang and Gillespie, 1984). Therefore, only the replacement value formula, clearly distinguished from the resale value of the home, might be a feature needed in a program.

Disability/Health Insurance More complex than most other insurance problems was the area of insurance concerning health matters. Lang and Gillespie (1984) provided a checklist process for identifying the needed dollar amount of disability coverage. Based on income data from the budget, deduction for Social Security benefits and spousal income, an amount could be stated. The limitation on the amount of coverage to be purchased followed apparent industry guidelines of 60% to 70% of pre-disability income for the covered individual. It was possible for such a computation to be provided in financial planning software. More subjective was the area of health insurance with the proliferation of policy coverages and perceptions of need versus ability to pay, including persons covered by Medicare Part A.

and/or Part B (Chasen, 1983) The focus in this area was on buymanship of coverage limits and no general computational approach seemed feasible for personal finance software

From the preceding, three tasks concerning life insurance, one task for casualty/liability and one task for disability/health coverage should be implemented in a quality microcomputer program The presence of each of the following tasks would be valued at one point for implementation of the insurance concept.

| | Points |
|---|--------|
| 1 Life Insurance | |
| a Needs Method | 1 |
| b Analyze Cash Value Costs | 1 |
| c Analyze Term Costs | 1 |
| 2 Casualty/Liability | |
| a Calculate 80% of Replacement Value | 1 |
| 3. Disability/Health Coverages | |
| a Calculate 60%-70% of predisability income | 1 |
| Total Points | 5 |

Saving/Investing

A general procedure for stating goals, evaluating dollar amounts and related features was synthesized from Lang and Gillespie (1984) The method did not lead to a recommendation for any particular type of savings or investment vehicle but relied on computing the time value of money at various interest rates over differing maturities The subjective matter of risk orientation and acceptance was not directly included The computational base of the process was suitable for personal finance software,

since interest rates, deposits/payments, period of saving/investing and other factors were readily quantifiable and subject to generation by formula. For implementation of the saving/investing concept, a quality micro-computer program would be expected to include the below listed eight tasks concerning lump sum investments and 11 tasks for periodic investments. Each of the tasks would be valued at one point if implemented in the program.

| | Points |
|------------------------------------|--------|
| 1 Single Pay (Lump Sum) Investment | |
| a Dollar Amount Deposited/Invested | 1 |
| b Interest Rate | 1 |
| c Maturity | 1 |
| d Compounding | |
| 1) Annually | 1 |
| 2) Monthly | 1 |
| 3) Other | 1 |
| e Inflation Rate Estimate | 1 |
| f Terminal Value | 1 |
| 2 Periodic Investment | |
| a. Amount Deposited/Invested | 1 |
| b Investment Frequency | |
| 1) Annually | 1 |
| 2) Monthly | 1 |
| 3) Other | 1 |
| c Interest Rate | 1 |
| d Maturity | 1 |
| e Compounding | |
| 1) Annually | 1 |

| | Points |
|---------------------------|--------|
| 2) Monthly | 1 |
| 3) Other | 1 |
| f Inflation Rate Estimate | 1 |
| g Terminal Value | 1 |
| Total Points | 19 |

Money Mechanics

A capability for recording amounts deposited, withdrawn by checks, draft or in cash, charges/fees for servicing the account and similar activities can be an option to help with the tasks of managing income and expenditures via checking, share, money market and savings accounts. The capability to print checks to pay bills is an additional option, although both the accounting and check writing functions of personal finance programs have been criticized as unnecessary by some (Bear, 1983, McWilliams, 1983). A number of financial records can be maintained by computer and were considered desirable. They included a personal property inventory, records with data about home ownership and home improvements, investment and savings accounts, loans, insurance policies and a directory for recording where important documents are stored and other vital statistics about family members.

Two key reports can be produced if appropriate financial information is entered in other parts of a personal finance program. An income statement could be printed from actual budget data and a financial statement or balance sheet could be provided if assets and liability information were available from ownership and loan records (Johnston et al, 1974, Lang and Gillespie, 1984; Account Book of Personal Records, n d)

For implementation of the saving/investing concept, a quality micro-computer program would be expected to include the below listed eight tasks concerning lump sum investments and 11 tasks for periodic investments. Each of the tasks would be valued at one point if implemented in the program.

| | Points |
|--------------------------------|--------|
| 1 Account Management | |
| a Record Deposits | 1 |
| b. Record Withdrawals/Charges | 1 |
| c Balance Account | 1 |
| d Write Checks | 1 |
| 2 Financial/Family Records | |
| a. Personal Property Inventory | 1 |
| b Insurance Policies | 1 |
| c. Financial Assets | 1 |
| d Financial Liabilities | 1 |
| e Family Vital Statistics | 1 |
| f. Family Papers Locator | 1 |
| 3. Reporting | |
| a Income Statement | 1 |
| b. Net Worth Statement | 1 |
| Total Points | 12 |

Taxpaying

Congressional work on tax reform and simplification was in progress the time of the research, making accurate judgment about appropriate software features difficult to determine. It was concluded, however, that personal financial planning programs should have some capacity to design

items in basic categories for tax purposes such as adjustments to income and deductible expense items (Lang and Gillespie, 1984). Designation of income as taxable or nontaxable and expenses as deductible or qualifying for tax credit was a potential feature. A report producing a statement of those items and amounts was useful for tax management.

From the discussion, four tasks concerning income items and three tasks concerning expense items should be expected in a quality microcomputer program. Each of the following tasks would be valued at one point for implementation of the taxpaying concept.

| | Points |
|-------------------------------|--------|
| 1 Income Items | |
| a Designates Taxable Items | 1 |
| b Designates Nontaxable Items | 1 |
| c Designates Withholding | 1 |
| d Produces Report | 1 |
| 2 Expense Items | |
| a Designates Deductible Items | 1 |
| b Designates Tax Credit Items | 1 |
| c Produces Report | 1 |
| Total Points | 7 |

Data Collection and Analysis

A three-part data collection instrument was designed to obtain general identification information about each program and data necessary for answering the first two questions designed to validate the methodology. The study concerned variables on the nominal and ordinal measurement scales, consequently, statistical analysis was limited to percentage and mode (Minium, 1978, Bartz, 1981). Logical comparisons were based upon the

percentage and modal information. The instrument, Program Content Assessment Instrument, was included as Appendix B to this study. The data derived from the instrument were reported principally on a program-by-program basis, since a small purposive sample was involved.

Part A of the instrument covered software program identification in a bibliographic format, plus the list price and actual purchase cost of the program. Part B of the instrument dealt with the first question on the six personal financial management concepts and the extent of their coverage in program documentation. Those variables were nominal and ordinal, respectively. The instrument listed the six benchmark financial planning concepts with a column for a page count next to each concept name. Analysis of the content involved summing the pages for all concepts represented and stating the coverage of each concept in terms of percentage of the total. The rationale for this approach was that page size and type font varied in the documentation of each program, making valid comparisons of raw variable data impractical. The differences in documentation among programs was evident through visual inspection of example pages reproduced from two of the programs in Figures 1 and 2. The effect of stating concept coverage in the documentation in percentages for each program was to provide a consistent measurement. This measurement could be used to compare programs which purportedly addressed the same personal finance concepts.

Part C of the instrument addressed the second question on the extent of concept implementation in the software in each program. Each of the six benchmark concepts was listed along with an estimate of the tasks required to operationally apply them via the software. The tasks listed were based on the synthesis of core personal financial planning concepts in the literature review and the discussion of their operational features in the development of the methodology section. Rather than using a page-count

INTRODUCTION

Like any good piece of software, *Your Personal Net Worth* has true depth and sophistication. In minutes, *Your Personal Net Worth* can help you manage your money in ways that would take hours by almost any other method. To make the best use of *Your Personal Net Worth*, we strongly urge you to read this brief introduction. It will take you only a few minutes.

WHAT'S YOUR PERSONAL NET WORTH?

Your Personal Net Worth was designed specifically to make financial management both effective AND enjoyable. *Your Personal Net Worth* will help you:

- Establish a Budget.
- Monitor your income and expenses.
- Organize your household inventory.
- Record your stock transactions.
- Discover your Net Worth.
- Create a Balance Sheet that reflects your assets and liabilities.
- Prepare your year-end tax returns more easily.

Your Personal Net Worth is written to be easily understood by people who have had difficulty managing their money and are first-time computer users, and by those who are experts in these areas. *Your Personal Net Worth* was not written for both homeowners and small businesses. It was written EXCLUSIVELY for homeowners.

Source: Your Personal Net Worth (1984).

Figure 1. Example Page From Your Personal Net Worth User's Manual

INTRODUCTION

Congratulations on selecting the *Home Accountant Expanded* to be your financial management program for the Apple IIc or Apple IIe microcomputer

You have chosen one of the finest, most comprehensive programs available to individuals who want to harness the power of the microcomputer to give them a clear, accurate picture of their financial condition at any given time

Knowing how much money is coming in, and exactly where it is being spent is important day-to-day information for almost everybody. But it is particularly vital for any person faced with meeting such financial challenges as a college education, a down payment for a home, or preparing for a comfortable retirement.

Carefully tracking income and expenses over a period of time will set up a bank of historical data to help you make more realistic projections and set financial goals which are attainable for you and your family.

The *Home Accountant Expanded* is an extraordinarily powerful and flexible program. It will help you keep track of all kinds of financial transactions, from the cash in your pocket to a sophisticated investment portfolio, by spending an amazingly small amount of time and effort.

In a rapidly changing economy, the *Home Accountant Expanded* is an important tool in helping you spend today's money wisely, and in helping you prepare for a brighter financial future.

THE HOME ACCOUNTANT EXPANDED PACKAGE

In this package you should have the following:

- 1 This user's guide
- 2 The *Home Accountant Expanded* program disk. This is a double-sided disk.
- 3 Your Home Accountant Expanded warranty card
- 4 An order form for ordering preprinted checks

Source: Home Accountant Expanded (1985)

Figure 2 Example Page From Home Accountant Expanded User's Manual

system for content analysis, the extent of each concept's implementation was determined by the presence or absence of the various tasks, a value of one point was given for each task implemented and a value of zero when an implementing task was not present. A comments section was included for each concept to record additional observations. Again, nominal data on functions was involved with the potential for ordinal data. Analysis involved counting the number of tasks present to find the total point value for each concept area. A comparative index for software evaluation was devised using the total of point values for each benchmark concept implementation area specified in the data collection instrument. The numeric values are as specified on the last page of the instrument. Each program could be analyzed in comparison with the 60 total points of the benchmark to give an overall measure of its software implementation level. It was specified that a more fully implemented concept would be indicated by having a greater number of tasks present and, therefore, a higher associated point value. The point values for any concept could be assessed against the maximum point values stated as the standard as well as against the point values of other programs.

Representative family financial data based on Lang and Gillespie (1984) were developed to assist in checking concept implementation. It was not intended that the entire data set be used in any program or to create finished financial planning products. The items served as an arbitrary but predetermined standard set of information about a "typical" family and its financial data, the data could be entered, as necessary, into a program to verify performance of a task in the software. This approach was used to avoid inventing test data on an ad hoc basis which might favor one particular program over another. This set of data is contained in Appendix C.

The responses to the third and fourth questions were derived from the data collected for the previous questions. The third research question involved a summary comparison of programs against one another using the percentage of documentation assigned to a concept and the percentage of concept software implementation data. For the fourth question on identification of software subtypes, classification was based on frequency and/or modality of concepts among the programs. The results of data collection and analysis for the preceding four questions were used to determine basic satisfaction of the overall validation procedure.

Population and Sample

The initial population for consideration was microcomputer software programs capable of personal financial planning/management functions. Three criteria were adopted to sift through the various programs which were identified as usable for some personal finance task. Six widely available sources of information about software programs for Apple computers were consulted in applying the criteria. The sources were

- 1 "Money Management Software" (Bartimo, 1985)
- 2 A+ Buyers Guide (1985)
- 3 "The Software and Accessories Directory" (SoftGuide The Buyers Guide, 1985)
- 4 "Personal Finance Software" (The Apple II Review, 1985)
- 5 "Personal Finance" (The Home Software Catalog, 1985)
- 6 "Roundup of Financial Software" (Malnig, 1986)

The first criterion was that the software be compatible with the previously described Apple //e system. This had the effect of eliminating programs written exclusively for nonApple //e systems since they were not compatible with the Apple operating system. A second criterion was that

the major purpose of the software program be personal financial management. Many programs, such as accounting-style spreadsheets, were multipurpose in nature and could be adapted for some personal finance tasks (Goodman and Brevdy, 1984). Use of this criterion eliminated small business accounting programs, data base management software, spreadsheet programs and integrated word processing-spreadsheet-data base programs because they were not specifically designed for personal financial planning. A third criterion was that the software not be a simulation or a skill teaching program but one that was intended for use with actual data. Educational software and related programs such as simulations designed to teach some financial management skill were similarly removed from consideration. Application of these criteria provided a total sampling frame of 57 programs for possible study (Adams and Schvaneveldt, 1985). The list of programs is contained in Appendix D, Personal Financial Planning Sampling Frame.

Selection from this sampling frame presented two related problems. First, the software programs listed appeared to possess a very wide spectrum of capabilities ranging from those described as comprehensive or full-featured programs to single-purpose programs. Second, the size of the sampling frame would necessitate acquisition of a considerable number of programs if random sampling was used to obtain the appropriate sample. Approximately 50 programs would constitute a random sample for a population with a size of 57 programs, according to Krejcie and Morgan (1983). The potential cost of such a large sample was deemed significant and a factor which required modification of selection procedures (Adams and Schvaneveldt, 1985). Since the purpose of the study was descriptive, it was felt that sample selection could be made on a nonprobability basis to obtain the most capable programs (Babbie, 1986). Despite the risks of systematic error (Bartz, 1981) in nonrandom samples, explicitly stated selection

criteria would serve to expose the nature of any bias to the reader (Huff, 1982)

Software programs were selected for the final sample based on descriptions in three sources as offering several major personal financial management functions, that is, the programs appeared to possess significant capabilities. Seventeen programs were eliminated from the sample since they were designed for a single function such as income tax preparation or check writing. Similarly, five software packages which appeared to be simply collections of basic calculation functions (that is, loan amortization, future value tables, etc.) were eliminated. The last stage in refining the final sample was to remove from consideration software programs that were not described or reviewed in at least three of the six sources used to identify the sampling frame. This eliminated 28 more programs from the list. The attributed purposes of the programs were cross-checked in additional sources to confirm or deny suitability for the final sample.

The criteria applied to define the sampling frame and the additional guidelines used for selection of the final sample created a purposive or judgmental sample (Babbie, 1986). The final sample consisted of the following seven personal financial management software programs: (1) Dollars and Sense, (2) Home Accountant Expanded, (3) Managing Your Money, (4) Personal Accountant, (5) Your Money Manager, (6) Your Personal Financial Planner and (7) Your Personal Net Worth.

Finally, concerning the costs of acquiring the software program sample, the researcher used an affordability or price range adapted from Consumer Reports ("What Home Computers Can Do," 1983). Based on that range, the maximum cost was established at \$130.00 for any one software program, with a total cost limit for the sample of approximately \$500.00.

Using discount software sources, this price limit permitted acquisition of all seven programs selected for the sample

Summary

The purpose of the study was to design and validate a methodology for evaluating personal financial planning microcomputer programs. A descriptive study was employed with the evaluative methodology based on an adaptation of content analysis techniques. The categories for content analysis were derived from certain established concepts of personal financial planning which were restated as the benchmark or standard for judging microcomputer program content. Six key concepts were identified as the benchmark which would be quantitatively measured both by the amount of coverage given to each benchmark concept in a program's documentation and the performance of specified tasks necessary to implement each concept in a program's software. A three-part instrument was developed to collect nominal and ordinal data on the page count of concept coverage in program documentation and the number of tasks implemented in program software. Analysis of the data was by frequency and mode for use in determining the content of each program and for comparing programs with one another and against the benchmark.

Validation of the methodology was tested by application to a small purposive sample of microcomputer programs. A sampling frame of 57 programs designed for personal finance tasks was initially identified. Based on the stepwise application of several criteria, a total of seven widely available multi-function personal financial planning software programs were selected for the final sample.

The ability to determine the presence and extent of benchmark concept functions in program documentation and selected implementation of certain

tasks would provide initial evidence of methodological validity. Further indication of methodological validity would be based on the capability to compare and classify programs in relation to one another and the stated benchmark.

CHAPTER IV

FINDINGS AND CONCLUSIONS

Introduction

The purpose of the study was to develop a method for evaluating personal financial planning microcomputer programs using a number of established personal finance concepts as an evaluative standard. The preceding chapter outlined an adaptation of content analysis as the methodology and described a corresponding instrument. Chapter IV presents detailed findings and analysis of each program in the sample which was selected for validation of the methodology.

The process for validating the methodology was to apply it to a sample of personal financial planning microcomputer programs. Six of seven programs selected for the final research sample were obtained. The one program that could not be acquired was Your Money Manager. Several computer software retailers and mail order sellers stated that the program was no longer available from distributors and that it was evidently out of production. Each program purchased was subjected to the methodology to determine concept coverage in the documentation and the extent of concept implementation in the software. For simplicity in presentation of the data, the results of analysis for each program were listed using program numbers one through six. Individual program data were integrated and analyzed to compare program conceptual content and to classify programs. Again, for ease in presenting information, program numbers one through six were used.

to present data in supporting tables. These findings established the basis for validation of the appropriateness and efficacy of the methodology as well as for its replicability. The chapter closes with a statement of the validity of the methodology for the purpose specified.

Individual Program Assessments

Program One

Program One, Dollars and Sense, was purchased from a retail outlet at a net cost of \$76.41, the price range for the program was \$100.00 to \$119.95, according to four sources. The program is contained on both sides of a single floppy disk and can be used with either one or two disk drives. The user is required to prepare separate disks for data storage. There were 127.25 total pages in the user's manual, i.e., the documentation. Of that total, 64.25 pages concerned areas outside the purpose of the study. As a matter of record for future reference, those topics involved a graphics display of financial data, a segment on business management functions, a glossary of personal finance terms and general operating information for the program.

The balance of the program's documentation, a total of 63 pages, addressed three benchmark personal finance concepts. In relation to this total, the major emphasis in the documentation was on money mechanics, with 48.75 pages (77.4% of the total) assigned to this concept. There were 13.0 pages (20.6% of the total) devoted to budgeting, while taxpaying was covered in 1.25 pages (2.0% of the total page count). The distribution of these three concepts by number of pages and by percentage of total pages is shown in Table I.

TABLE I
 CONTENT ANALYSIS OF DOLLARS AND SENSE
 DOCUMENTATION

| Concept | Page Count | Percentage |
|------------------|------------|------------|
| Budgeting | 13 00 | 20 6 |
| Cost of Credit | 0 | -- |
| Insurance | 0 | -- |
| Saving/Investing | 0 | -- |
| Money Mechanics | 48 75 | 77 4 |
| Taxpaying | 1 25 | 2 0 |
| Total | 63 00 | 100 00 |

The three benchmark concepts discussed in the documentation were implemented to varying degrees in the program's software. Paralleling the documentation, there was no software implementation of cost of credit, insurance and saving/investing concepts. All nine of the tasks specified in the benchmark for the budget concept were implemented in Dollars and Sense software. Nine of the twelve benchmark tasks for money mechanics were present in the software, omitted were three tasks concerning financial/family records. Six of seven tasks involved in the taxpaying concept area were implemented in the software, the one task not included was the designation of items qualifying for a tax credit. The point values for this program stated in relation to the benchmark values for the appropriate concepts are summarized in Table II. Money mechanics received much greater coverage in the program's documentation than did the other two concepts. In terms of the software, however, the budgeting concept represented the greatest capability, with all tasks implemented.

TABLE II
 CONTENT ANALYSIS OF CONCEPT IMPLEMENTATION
 TASKS IN DOLLARS AND SENSE SOFTWARE

| Concept/Tasks Values | Number of Tasks Implemented | Benchmark Point |
|--------------------------|--------------------------------|--------------------|
| <u>Budgeting</u> | | |
| Estimate Income | 4 | 4 |
| Estimate Expenses | 3 | 3 |
| Summarize Budget | 2 | 2 |
| <u>Money Mechanics</u> | | |
| Account Management | 4 | 4 |
| Financial/Family Records | 3 | 6 |
| Reporting | 2 | 2 |
| <u>Taxpaying</u> | | |
| Income Items | 4 | 4 |
| Expense Items | 2 | 3 |

Program Two

Program Two was the Home Accountant Expanded, acquired from a retail outlet at a net cost of \$31 83. The price range for this program, which was cited in six sources, ranged from \$69.95 to \$75 00. The program is contained on both sides of a single disk and can be operated with either one or two disk drives. The user is required to prepare separate data disks. There was a grand total of 178 0 documentation pages in the user's manual; 89 75 pages covered topics outside the purpose of the research. Those areas principally concerned a graphics capability, a memo pad feature, a computer/personal finance glossary and general program operating information.

A total of 88 25 pages of the documentation covered the benchmark personal finance concepts of budgeting, money mechanics and taxpaying. Money mechanics received the greatest amount of coverage, with 55 25 pages (62 6% of the total). Budgeting was addressed in 29 0 pages (32 9%) and taxpaying in 4 0 pages (4.5% of the total pages). The distribution of these three concepts by number of pages and percentage of page count is presented in Table III.

TABLE III
CONTENT ANALYSIS OF HOME ACCOUNTANT
EXPANDED DOCUMENTATION

| Concept | Page Count | Percentage |
|------------------|------------|------------|
| Budgeting | 29 00 | 32 9 |
| Cost of Credit | 0 | -- |
| Insurance | 0 | -- |
| Saving/Investing | 0 | -- |
| Money Mechanics | 55 25 | 62 6 |
| Taxpaying | 4 00 | 4.5 |
| Total | 88 25 | 100 0 |

Concerning program software, budgeting, money mechanics and taxpaying concepts were partially implemented, there was no implementation of cost of credit, insurance and saving/investing concepts. Six of nine tasks related to budgeting were present, it appeared that the user was required to determine and input net available income data, meaning that mandatory deduction, optional deduction and computation of available income tasks were not

performed by the software. For the money mechanics concept, 8 of 12 tasks were implemented; absent from the software were four financial/family records functions concerning personal property inventory, insurance policies, family vital statistics and family papers locator tasks. Five of seven taxpaying tasks were implemented in the software, the two tasks not performed were income and expense tax reports, but it was noted from the documentation that reporting of tax information was possible through transfer of data to a separate tax preparation program. The point values for program concept implementation are listed in relation to the appropriate benchmark values in Table IV. Money mechanics was the most extensively covered concept in the documentation, with budgeting second and taxpaying last. In terms of the number of tasks implemented relative to benchmark values, however, the greatest implementation capability appeared to be in the taxpaying concept. This was followed by the money mechanics concept, with budgeting reflecting the least implementation capability.

Program Three

Managing Your Money was program three in the sample. It was obtained by mail order at a net cost of \$103.00, but the usual retail price was \$199.95, according to five sources. The program is contained on both sides of three floppy disks, the user must prepare four disks to store data created with the program's modules. Two disk drives are required to operate the program.

This program had a grand total of 88.5 pages of printed documentation, of which 56 pages covered areas beyond the scope of this study. These topics included a glossary of personal finance terms, a memo pad segment and various operating instructions.

TABLE IV
 CONTENT ANALYSIS OF CONCEPT IMPLEMENTATION TASKS
 IN HOME ACCOUNTANT EXPANDED SOFTWARE

| Concept/Tasks Values | Number of Tasks Implemented | Benchmark Point |
|--------------------------|--------------------------------|--------------------|
| <u>Budgeting</u> | | |
| Estimate Income | 1 | 4 |
| Estimate Expenses | 3 | 3 |
| Summarize Budget | 2 | 2 |
| <u>Money Mechanics</u> | | |
| Account Management | 4 | 4 |
| Financial/Family Records | 2 | 6 |
| Reporting | 2 | 2 |
| <u>Taxpaying</u> | | |
| Income Items | 3 | 4 |
| Expense Items | 2 | 3 |

Two benchmark concepts were addressed at length in the documentation, for a total of 32.5 pages. Money mechanics accounted for 24.0 pages (73.8% of the page count) and budgeting for 8.5 pages (26.2% of the page count). The distribution is shown in Table V. The other four benchmark concepts were mentioned in the manual, but no effective page count was made since each reference amounted to less than one quarter of a page.

Although only two benchmark concepts were extensively addressed in the documentation, all six concepts were implemented to some extent in this program's software, as shown in Table VI.

All of the budgeting and taxpaying concepts stated for the benchmark were implemented in program software. The next-most extensively implemented concepts were saving/investing, with 13 of 18 tasks and money

mechanics, with 9 of 12 tasks present in the software. The tasks not covered in saving/investing were annual and monthly compounding and inflation rate estimating tasks. Tasks omitted from money management were personal property inventory, family vital statistics, and family papers locator. The least extensive implementation involved insurance and cost of credit concepts. Two of five insurance tasks were implemented by the software--both in the life insurance area, one involved the needs method and the other task was analysis of term costs. The two of eight cost of credit tasks which were implemented in the software were calculation of annual percentage rates (APR) and calculation of payments.

TABLE V
 CONTENT ANALYSIS OF MANAGING YOUR
MONEY DOCUMENTATION

| Concept | Page Count | Percentage |
|------------------|------------|------------|
| Budgeting | 8 50 | 26 2 |
| Cost of Credit | * | -- |
| Insurance | * | -- |
| Saving/Investing | * | -- |
| Money Mechanics | 24 00 | 73 8 |
| Taxpaying | * | -- |
| Total | 32 50 | 100 0 |

Note The asterisk (*) indicates less than one-quarter page

TABLE VI
 CONTENT ANALYSIS OF CONCEPT IMPLEMENTATION TASKS
 IN MANAGING YOUR MONEY SOFTWARE

| Concept/Tasks Values | Number of Tasks Implemented | Benchmark Point |
|---------------------------------------|--------------------------------|--------------------|
| <u>Budgeting</u> | | |
| Estimate Income | 4 | 4 |
| Estimate Expenses | 3 | 3 |
| Summarize Budget | 2 | 2 |
| <u>Cost of Credit</u> | | |
| Cash/Sales Loan | 2 | 3 |
| Rule of 78 Rebate Penalty | 0 | 1 |
| Revolving Credit | 0 | 3 |
| Loan Amortization Schedule | 0 | 1 |
| <u>Insurance</u> | | |
| Life Insurance | 2 | 3 |
| Casualty/Liability | 0 | 1 |
| Disability/Health | 0 | 1 |
| <u>Saving/Investing</u> | | |
| Single Pay Investment | 5 | 8 |
| Periodic Investment | 8 | 11 |
| <u>Money Mechanics</u> | | |
| Account Management | 4 | 4 |
| Financial/Family Records Reporting | 3 | 6 |
| | 2 | 2 |
| <u>Taxpaying</u> | | |
| Income Items | 4 | 4 |
| Expense Items | 3 | 3 |

As previously reported, no significant page count data were available in the program's documentation concerning four benchmark concepts. In examining the implementation of the concepts in the software, however, it was noted that explanatory information and user instructions were included in the software concerning the cost of credit, insurance, saving/investing and taxpaying concepts. This information was in the form of menu screens and "Help" screens, which provided guidance to the user concerning the implementation of the four concepts. All screens could be sent to an appropriate printer and transformed into printed copy for reference. In effect, the displays on the video monitor served as program documentation for the user. To provide a representative portrayal of documentation available to the user, a count of the screens was made and stated in terms of estimated page equivalents to arrive at an approximation of a page count. This process added 17.75 pages to the documentation for content analysis, for a new total of 50.25 pages. These data were used to create a revised final content analysis of the program's documentation. Despite the revision, money mechanics (47.8% of the pages) and budgeting (16.9% of the pages) were still the most extensively treated concepts in the documentation. Taxpaying (12.9% of the revised page count) was followed closely by insurance (12.4% of the page count). Saving/investing had 7.5% and cost of credit had 2.5% of the revised total pages of documentation. This revised distribution is shown in Table VII.

Managing Your Money was found to cover all six benchmark concepts in program documentation and to implement the concepts in the software. From the standpoint of implementation, the program's overall best capabilities were in budgeting and taxpaying concepts, which were both fully implemented. In addition, the program showed significant capability with the extensive implementation of money mechanics and saving/investing concepts.

TABLE VII
 REVISED CONTENT ANALYSIS OF MANAGING
YOUR MONEY DOCUMENTATION

| Concept | Page Count | Percentage |
|------------------|------------|------------|
| Budgeting | 8 50 | 16 9 |
| Cost of Credit | 1 25 | 2.5 |
| Insurance | 6 25 | 12 4 |
| Saving/Investing | 3 75 | 7 5 |
| Money Mechanics | 24 00 | 47 8 |
| Taxpaying | 6 50 | 12 9 |
| Total | 50 25 | 100 0 |

Program Four

Program Four in the sample was Personal Accountant. This program was purchased from a retail outlet at a cost of \$44 69; the price range, according to four sources, was \$35 00 to \$49 95. The program is contained on one side of a disk and operates only with one disk drive. The user must prepare separate data disks. This program was unique among the sample, since one side of the program disk contained the Apple version of Personal Accountant while the other side carried the IBM version. The program came with separate printed instruction booklets for each version. Only the Apple documentation and software were evaluated for the study. Total program documentation was 34 0 pages, of this total, 7 75 pages concerned miscellaneous program operating information.

A total of 26 25 pages in the documentation addressed four of the six benchmark personal finance concepts. The greatest proportion of this documentation, 19 5 pages (74 3%), concerned money mechanics. Budgeting was

addressed in 3 25 pages (12 4% of the total) and cost of credit in 2 5 pages (9 5% of the total). Saving/investing coverage amounted to 1 0 page (3.8% of the documentation) The page count and percentage distribution of the content is shown in Table VIII

TABLE VIII
CONTENT ANALYSIS OF PERSONAL ACCOUNTANT
DOCUMENTATION

| Concept | Page Count | Percentage |
|------------------|------------|------------|
| Budgeting | 3 25 | 12.4 |
| Cost of Credit | 2 50 | 9 5 |
| Insurance | 0 | -- |
| Saving/Investing | 1 00 | 3 8 |
| Money Mechanics | 19 50 | 74 3 |
| Taxpaying | 0 | -- |
| Total | 26 25 | 100 00 |

All four concepts noted in the documentation were implemented in the software to some degree Six of nine budgeting tasks were implemented The software did not perform the computation of available income task, although it appeared to provide a way to list mandatory and optional deduction data Also, it did not perform the two budget summary tasks The cost of credit was implemented to the extent that three of eight tasks were implemented, the three tasks were the calculation of loan payments and total cost and the production of an amortization schedule In saving/investing, 14 of 19 tasks were implemented The tasks not in the software

were the inflation rate estimation in both the single pay and periodic investment calculations. In periodic investing, the software did not provide for monthly or other contribution frequencies and did not provide an option for other than annual or monthly compounding. The money mechanics concept was implemented in 3 of 12 tasks which provided for deposit and withdrawal tasks under account management and production of an income statement under the reporting function. The point values for each of the four concepts in relation to the benchmark implementation values are summarized in Table IX. Although money mechanics received the most coverage in program documentation, saving/investing was the concept most extensively implemented in the software. Budgeting ranked second in both documentation coverage and software implementation.

Program Five

Your Personal Financial Planner was Program Five in the sample. It was acquired on sale for \$52.57, a \$10.00 mail-in rebate reduced the net cost to \$42.57. The usual retail price was \$99.95, according to five sources. The program is contained on both sides of two disks and can be operated with either one or two disk drives. The user is required to prepare four separate disks for use with the various modules of the program. Program documentation constituted a grand total of 144.5 pages. This total included several topics extraneous to the purpose of the study. The topics in that category included a pocket calculator function, a memo pad feature and general operating and data maintenance instructions.

A total of 115.25 pages were found to cover three of the benchmark personal finance concepts. With 79.75 pages (69.2% of the total pages), money mechanics was the most extensively covered concept. Budgeting was 18.5 pages (16.1% of the total pages,) while saving/investing was 17.0

pages (14.7% of the total pages). The page count and percentage distribution for the three concepts is shown in Table X.

TABLE IX
CONTENT ANALYSIS OF CONCEPT IMPLEMENTATION TASKS
IN PERSONAL ACCOUNTANT SOFTWARE

| Concept/Tasks Values | Number of Tasks Implemented | Benchmark Point |
|------------------------------------|-----------------------------|-----------------|
| <u>Budgeting</u> | | |
| Estimate Income | 3 | 4 |
| Estimate Expenses | 3 | 3 |
| Summarize Budget | 0 | 2 |
| <u>Cost of Credit</u> | | |
| Cash/Sales Loan | 2 | 3 |
| Rule of 78 Rebate Penalty | 0 | 1 |
| Revolving Credit | 0 | 3 |
| Loan Amortization Schedule | 1 | 1 |
| <u>Saving/Investing</u> | | |
| Single Pay Investment | 7 | 8 |
| Periodic Investment | 7 | 11 |
| <u>Money Mechanics</u> | | |
| Account Management | 2 | 4 |
| Financial/Family Records Reporting | 0 | 6 |
| | 1 | 2 |

The three benchmark concepts found in the documentation were implemented to varying extent in program software. Budgeting was completely implemented, with all nine benchmark tasks included in the software. Eleven of twelve money mechanics tasks were implemented in the software,

the single task not included was the family papers locator. For the saving/investing concept, none of the eight tasks concerning single pay investments were in the software.

TABLE X
 CONTENT ANALYSIS OF YOUR PERSONAL FINANCIAL
PLANNER DOCUMENTATION

| Concept | Page Count | Percentage |
|------------------|------------|------------|
| Budgeting | 18.50 | 16.1 |
| Cost of Credit | 0 | -- |
| Insurance | 0 | -- |
| Saving/Investing | 17.00 | 14.7 |
| Money Mechanics | 79.75 | 69.2 |
| Taxpaying | 0 | -- |
| Total | 115.25 | 100.0 |

Six of nine tasks concerning periodic investment were implemented in the program, tasks omitted were monthly and other contribution options as well as specification of annual, monthly and other compounding periods. Summary results of the content analysis concerning implementation of the three concepts is presented in Table XI. Overall, in relation to the benchmark values, the best capability of the program in terms of implementation was budgeting, although money mechanics was nearly as complete.

TABLE XI
 CONTENT ANALYSIS OF CONCEPT IMPLEMENTATION TASKS
 IN YOUR PERSONAL FINANCIAL PLANNER SOFTWARE

| Concept/Tasks Values | Number of Tasks Implemented | Benchmark Point |
|--------------------------|--------------------------------|--------------------|
| <u>Budgeting</u> | | |
| Estimate Income | 4 | 4 |
| Estimate Expenses | 3 | 3 |
| Summarize Budget | 2 | 2 |
| <u>Saving/Investing</u> | | |
| Single Pay Investment | 0 | 8 |
| Periodic Investment | 6 | 11 |
| <u>Money Mechanics</u> | | |
| Account Management | 4 | 4 |
| Financial/Family Records | 5 | 6 |
| Reporting | 2 | 2 |

Program Six

Program Six, Your Personal Net Worth, was purchased at a cost of \$47.05 from a mail order outlet. The price range for the program, according to the six sources, ranged from \$79.95 to \$100.00. The program is contained on one side of one floppy disk and requires the user to prepare separate data disks. The program can be operated with either one or two disk drives. Total program documentation was 124.0 pages, this included two topic areas outside the scope of the study. These topics, covering 36.75 pages, were a glossary of personal finance terms and general program operating information.

There were 87.25 pages in the documentation, which addressed three benchmark personal financial planning concepts. Money mechanics, with 68.0

pages, composed 77.9% of the documentation, budgeting, with 16.25 pages covered 18.6%. The third concept, taxpaying, was addressed in 3.0 pages (3.4% of program documentation). The distribution of content among the concepts is shown in Table XII.

TABLE XII
CONTENT ANALYSIS OF YOUR PERSONAL NET
WORTH DOCUMENTATION

| Concept | Page Count | Percentage |
|------------------|------------|------------|
| Budgeting | 16.25 | 18.6 |
| Cost of Credit | 0 | -- |
| Insurance | 0 | -- |
| Saving/Investing | 0 | -- |
| Money Mechanics | 68.00 | 77.9 |
| Taxpaying | 3.00 | 3.4 |
| Total | 87.25 | 99.9 |

Similar to the results of the content analysis of the documentation, the concepts of budgeting, money mechanics and taxpaying were found to be implemented in the program's software. Five of nine budgeting concept tasks were found in the software. It appeared, however, that net income only could be used, therefore, the three tasks concerning mandatory deductions, optional deductions and computation of available income were not implemented. In addition, the expense task related to savings and investing was not implemented. Nine of the 12 money mechanics tasks were implemented in the software. The three tasks omitted were financial/family

records functions involving insurance policies, family vital statistics and the family papers locator. Four of seven taxpaying tasks were implemented. The tasks which were not implemented were designation of nontaxable and withholding income items and designation of tax credit expense items. The content analysis of concept implementation for this program is summarized in Table XIII. The best overall implemented capability in relation to benchmark values for this program was money mechanics. This capability was matched by being the most extensively covered concept in program documentation. Budgeting and taxpaying concepts were implemented to a lesser extent in relation to benchmark values, they approximately equaled one another concerning percentage of values implemented.

TABLE XIII
CONTENT ANALYSIS OF CONCEPT IMPLEMENTATION TASKS
IN YOUR PERSONAL NET WORTH SOFTWARE

| Concept/Tasks Values | Number of Tasks Implemented | Benchmark Point |
|---------------------------------------|--------------------------------|--------------------|
| <u>Budgeting</u> | | |
| Estimate Income | 1 | 4 |
| Estimate Expenses | 2 | 3 |
| Summarize Budget | 2 | 2 |
| <u>Money Mechanics</u> | | |
| Account Management | 4 | 4 |
| Financial/Family Records Reporting | 3 | 6 |
| | 2 | 2 |
| <u>Taxpaying</u> | | |
| Income Items | 2 | 4 |
| Expense Items | 2 | 3 |

Comparative Analysis of Program Documentation

Based on the preceding individual reports of program content analyses, the most extensive documentation of benchmark concepts was found in Program Five (Your Personal Financial Planner), with 115 25 pages, the least was in Program Four (Personal Accountant), with 26 25 pages. The extent of documentation for all six programs is illustrated in Table XIV.

TABLE XIV
PROGRAM DOCUMENTATION PAGE COUNT FOR
BENCHMARK CONCEPTS

| Program Number and Name | Page Total |
|--|------------|
| One <u>Dollars and Sense</u> | 63 00 |
| Two <u>Home Accountant Expanded</u> | 88 25 |
| Three. <u>Managing Your Money</u> | 50 25 |
| Four <u>Personal Accountant</u> | 26 25 |
| Five. <u>Your Personal Financial Planner</u> | 115 25 |
| Six <u>Your Personal Net Worth</u> | 87 25 |

In comparing program documentation on the basis of the number and frequency of concepts addressed, it was found that the frequency of concept coverage was bimodal since all six programs covered two personal finance concepts--budgeting and money mechanics. The most extensive coverage was given to money mechanics, with five of the six programs devoting 60% or

more of their documentation to this concept. The exception was Program Three (Managing Your Money), which gave 47.8% of documentation coverage to money mechanics. Budgeting ranked second in terms of percentage coverage in the documentation. Program Two (The Home Accountant Expanded) gave the most coverage to budgeting (32.9%), while Program Four (Personal Accountant) gave the least coverage (12.4%).

The next most frequently addressed concept was taxpaying, with four programs giving some attention to it. Program Three (Managing Your Money) gave the concept the most extensive attention (12.9%). The other three programs gave less than 5% coverage to taxpaying. The saving/investing concept was addressed in the documentation for three of the six programs. Program Six (Your Personal Financial Planner) provided the most coverage (14.7%), while the other two programs gave less than 10% of their documentation to it. The cost of credit concept was found in two programs, but neither gave it as much as 10% coverage. The insurance concept was found only in Program Three (Managing Your Money). This program gave 12.4% of documentation coverage to the concept. Comparative data based on the percentage of concept coverage in each program's documentation is presented in Table XV.

In overall comparative terms, Program Five (Your Personal Financial Planner) had the greatest amount of documentation available. Nevertheless, Program Three (Managing Your Money) provided the most comprehensive coverage of concepts in program documentation, since it included all six benchmark concepts.

Comparative Analysis of Program Software Implementation

Based on the detailed reports of concept implementation in the

TABLE XV
 PERCENTAGE OF PROGRAM DOCUMENTATION ASSIGNED TO
 PERSONAL FINANCE CONCEPTS

| Concept | Program One | Program Two | Program Three | Program Four | Program Five | Program Six |
|------------------|----------------|----------------|------------------|-----------------|-----------------|----------------|
| Money Mechanics | 77 4 | 62 6 | 47 8 | 74 3 | 69 2 | 77 9 |
| Budgeting | 20 6 | 32 9 | 16 9 | 12 4 | 16 1 | 18 6 |
| Taxpaying | 2 0 | 4 5 | 12 9 | -- | -- | 3 4 |
| Saving/Investing | -- | -- | 7 5 | 3 8 | 14 7 | -- |
| Cost of Credit | -- | -- | 2 5 | 9 5 | -- | -- |
| Insurance | -- | -- | 12 4 | -- | -- | -- |
| Total Percentage | 100 0 | 100 0 | 100 0 | 100 0 | 100 0 | 99 9 |

Legend Program One = Dollars and Sense
 Program Two = Home Accountant Expanded
 Program Three = Managing Your Money
 Program Four = Personal Accountant
 Program Five = Your Personal Financial Planner
 Program Six = Your Personal Net Worth

software for each computer program, it was found that none of the programs fully implemented all of the tasks in all six benchmark concept areas. The software implementation data are summarized for convenient reference in Table XVI. Three programs implemented all nine of the tasks identified for the budgeting concept: Dollars and Sense, Managing Your Money and Your Personal Financial Planner. Only one program (Managing Your Money) fully implemented any other concept and that was taxpaying. No other concepts were fully implemented in any of the six programs.

All six programs did implement budgeting and money mechanics in varying degrees. As noted, three programs fully implemented all benchmark budgeting concept tasks, the other three implemented more than half the tasks. Although money mechanics was implemented in each program, none of them did so completely. Program Five (Your Personal Financial Planner) was most complete, with 11 of 12 tasks, three other programs implemented nine tasks and one performed eight tasks. To provide a simplified overview of implementation, the percentage of concept implementation in the software for each program is shown in Table XVII.

The next most widely implemented concept was taxpaying. This concept was implemented in four programs, with Program Three (Managing Your Money), doing so completely. The other three programs implemented more than half the tasks for the taxpaying concept. Saving/investing was implemented in three programs. Although none of the programs covered all tasks, two of them implemented more than two-thirds of the tasks. Program Four (Personal Accountant) implemented 14 tasks, while Program Three (Managing Your Money) covered 13 taxpaying tasks. Cost of credit and insurance were the least implemented concepts, since they were included in two programs and one program, respectively. Less than half the tasks were implemented for either concept in either program.

TABLE XVI
POINT VALUE SUMMARY OF CONCEPT IMPLEMENTATION
IN PROGRAM SOFTWARE

| Concept/Tasks | Program One | Program Two | Program Three | Program Four | Program Five | Program Six | Benchmark Values |
|-------------------------|-------------|-------------|---------------|--------------|--------------|-------------|------------------|
| <u>Budgeting</u> | | | | | | | |
| Income | 4 | 1 | 4 | 3 | 4 | 1 | 4 |
| Expenses | 3 | 3 | 3 | 3 | 3 | 2 | 3 |
| Summary | 2 | 2 | 2 | - | 2 | 2 | 2 |
| Subtotal | 9 | 6 | 9 | 6 | 9 | 5 | 9 |
| <u>Cost of Credit</u> | | | | | | | |
| Loans | - | - | 2 | 2 | - | - | 3 |
| Rebate Penalty | - | - | - | - | - | - | 1 |
| Revolving Credit | - | - | - | - | - | - | 3 |
| Schedule | - | - | 2 | 1 | - | - | 1 |
| Subtotal | - | - | 2 | 3 | - | - | 8 |
| <u>Insurance</u> | | | | | | | |
| Life | - | - | 2 | - | - | - | 3 |
| Casualty/Liability | - | - | - | - | - | - | 1 |
| Disability/Health | - | - | - | - | - | - | 1 |
| Subtotal | - | - | 2 | - | - | - | 5 |
| <u>Saving/Investing</u> | | | | | | | |
| Single Pay | - | - | 5 | 7 | - | - | 8 |
| Periodic | - | - | 8 | 7 | 6 | - | 11 |
| Subtotal | - | - | 13 | 14 | 6 | - | 19 |

TABLE XVI (Continued)

| Concept/Tasks | Program One | Program Two | Program Three | Program Four | Program Five | Program Six | Benchmark |
|---------------------------|-------------|-------------|---------------|--------------|--------------|-------------|-----------|
| <u>Money Mechanics</u> | | | | | | | |
| Account Managing | 4 | 4 | 4 | 2 | 4 | 4 | 4 |
| Records | 3 | 2 | 3 | - | 5 | 3 | 6 |
| Reports | 2 | 2 | 2 | 1 | 2 | 2 | 2 |
| Subtotal | 9 | 8 | 9 | 3 | 11 | 9 | 12 |
| <u>Taxpaying</u> | | | | | | | |
| Income Items | 4 | 3 | 2 | - | - | 2 | 4 |
| Expense Items | 2 | 2 | 3 | - | - | 2 | 3 |
| Subtotal | 6 | 5 | 5 | - | - | 4 | 7 |
| <u>Total Point Values</u> | 24 | 19 | 42 | 26 | 26 | 18 | 60 |

TABLE XVII
 PERCENTAGE OF CONCEPT TASKS IMPLEMENTED WITHIN
 PROGRAM SOFTWARE

| Concept | Program One | Program Two | Program Three | Program Four | Program Five | Program Six |
|------------------|-------------|-------------|---------------|--------------|--------------|-------------|
| Budgeting | 100 0 | 66 7 | 100 0 | 66 7 | 100 0 | 55 6 |
| Money Mechanics | 75 0 | 66 7 | 75 0 | 25 0 | 91 7 | 75 0 |
| Taxpaying | 85 7 | 71 4 | 100 0 | -- | -- | 66 7 |
| Saving/Investing | -- | -- | 72 2 | 73 7 | 31 6 | -- |
| Cost of Credit | -- | -- | 25 0 | 37 5 | -- | -- |
| Insurance | -- | -- | 40 0 | -- | -- | -- |

Legend Program One = Dollars and Sense
 Program Two = Home Accountant Expanded
 Program Three = Managing Your Money
 Program Four = Personal Accountant
 Program Five = Your Personal Financial Planner
 Program Six = Your Personal Net Worth

In overall comparison of programs, the most capable software was in Program Three (Managing Your Money), since it implemented all six concepts to some extent. As illustrated in Table XVIII, another index of software capability is that this program implemented 42 of 60 (70%) of the benchmark tasks.

TABLE XVIII
COMPARISON OF CONCEPT TASK IMPLEMENTATION

| Program Number and Name | Point Value | Percentage of Benchmark |
|---|-------------|-------------------------|
| One <u>Dollars and Sense</u> | 24 | 40 |
| Two <u>Home Accountant Expanded</u> | 19 | 32 |
| Three. <u>Managing Your Money</u> | 42 | 70 |
| Four. <u>Personal Accountant</u> | 26 | 43 |
| Five. <u>Your Personal Financial Planner</u> | 26 | 43 |
| Six <u>Your Personal Net Worth</u> | 18 | 30 |

Note Benchmark = 60 points

Classification of Programs

The comparative data summarized in Tables XV, XVI, and XVII were examined to determine if subtypes of programs could be identified. In terms of concept coverage in both the documentation and software, only one program addressed all six benchmark concepts. This program, Managing Your Money, was the only one which could be characterized as a comprehensive type of personal finance planning program. Since not all tasks specified in the benchmark concepts were implemented in the software, Managing Your Money could not be classified as a fully featured personal financial planning program.

The data about the remaining five programs reflected considerable variability in the number of concepts included in the programs and the coverage given to the concepts. Analysis showed that money mechanics was the concept most extensively addressed, both in the documentation and software of the five programs. Budgeting was given less extensive treatment in the programs, but was present to varying degrees in each one. The other concepts were not included in several of the programs and were given relatively small percentages of total program coverage. Since these five programs were not comprehensive but did include money management and budgeting, it was determined that they could be provisionally classified as basic personal financial planning programs.

Validation of the Methodology

The preceding findings and analysis concerned evaluations of individual computer programs. The following re-examines those data to determine whether the methodology produced appropriate answers to the specific questions posed for the study.

The first question asked if the methodology would identify certain benchmark concepts of personal financial planning, as well as determining how extensively the concepts were treated in the documentation, that is, user manuals and references, of a microcomputer program. The methodology was found to provide for the identification of the benchmark concepts in the documentation of all six programs used as a sample. In addition, the methodology resulted in quantitative data about the extent of concept coverage in the documentation of the six sample programs. Both raw data concerning total pages devoted to all concepts and the relative amount of coverage given to each concept were determinable for the programs. Additionally, the raw data could be restated as percentages of the total for a program for possible use in comparing relative coverages among two or more comparable programs.

The second question asked whether the methodology could assess the extent to which each personal financial planning concept was actually carried out in the software. The methodology did produce quantitative information on the extent of concept implementation in the software for each concept in the sample programs. It was found that implementation of a concept could be stated at three levels of detail. At the most basic level, essentially that of the data collection instrument, each task for each concept could be listed as either present or absent in the software, that level was unwieldy. The next level was an intermediate stage. Here the data were summarized within subareas of each concept, such as estimating expenses under the budgeting concept, or for each particular concept. This provided a less lengthy and more readily managed set of information about concept implementation. The most abstract level of stating and analyzing data was the program summary. At this level, the point total of all tasks for all concepts is summed for each program to provide a single

number to represent the overall extent of concept implementation in the software. Furthermore, these levels of quantification could be stated in relation to the predetermined benchmark point values at corresponding levels, that is, basic, intermediate or summary.

The third question asked whether the methodology could provide a means to quantitatively compare personal financial planning programs. It was found that the data obtained in response to the first two questions was adequate to make comparisons of concept coverage in the documentation and implementation in the software of the sample programs. The individual data dealing with coverage in the documentation for each sample program were compared in Table XV. The precise nature of the comparisons to be made was dependent upon the needs of the observer, that is, a range of information is available to permit an analyst or consumer to determine such things as which programs included some discussion of insurance concepts in their documentation or whether all the programs addressed taxpaying and the relative attention given to those concepts in each program's user manual. A similar capacity is provided by the methodology for evaluation of conceptual implementation in software. As Table XVI illustrated, if budgeting is of primary interest, the methodology produced information for a user to select the most capable software. In this instance, three programs implemented all the same tasks and all three met the benchmark standard.

The fourth and last question asked if the methodology could be used to provide a classification system for the personal financial planning micro-computer programs. In this regard, the data about the programs in the sample presented in Tables XV, XVI, and XVII were consulted. The data showed one program which addressed all concepts in both documentation and software. A program which met those standards could be assigned the label of a comprehensive program. Furthermore, if a program contained all the

implementation tasks specified in the benchmark, it might be further classified as fully featured. A program which did not meet the standard of comprehensiveness could be arbitrarily assigned some other label such as a basic program; five programs in the sample qualified for such a subtype label. It appeared that at least a rudimentary classification system had been produced by the methodology.

To clarify the findings, it was noted that the results of the methodology can be used to produce information at different levels of detail concerning both the documentary and software content of a program. The levels could range from broadly stating documentary content in percentage terms to a more lengthy definition of software content on a task-by-task basis.

While there were many potential ways to state such data derived by the methodology, the intended audience would be the key determinant of the level of detail and approach used in presenting the data. The individual analyses of programs could be used to compare the content emphasis of a program with a number of generally similar programs. Alternatively, the data could be simplified and used to compare two competitive programs side-by-side. As illustrated in Tables XIX and XX, the data can be recast into simple qualitative terms rather than the quantitative ones reported in Tables XV and XVI.

A program such as Managing Your Money could be evaluated directly against Home Accountant Expanded in terms of whether or not various key concepts were covered. Overall reporting of content evaluation results of the user manual or software could be accomplished in a summary format such as that depicted in Table XIX. Information in this type of format would readily indicate broad areas of program similarity and difference. Table XIX clearly shows that both programs contain budgeting, money mechanics and

taxpaying concept modules, it further shows only one program has modules on the other three benchmark concepts of saving/investing, cost of credit and insurance

TABLE XIX
COMPARISON OF PERSONAL FINANCIAL PLANNING
COMPUTER PROGRAM CONCEPT CONTENT

| Benchmark Concept | <u>Managing Your Money</u> | <u>Home Accountant Expanded</u> |
|-------------------|--------------------------------|-------------------------------------|
| Budgeting | Yes | Yes |
| Money Mechanics | Yes | Yes |
| Taxpaying | Yes | Yes |
| Saving/Investing | Yes | No |
| Cost of Credit | Yes | No |
| Insurance | Yes | No |

The methodology provides for more detailed comparative assessment between the particular areas of the programs, for example, the taxpaying modules. The fact that Managing Your Money implemented all seven taxpaying tasks while the other program implemented fewer tasks is readily illustrated by the simplified content analysis in Table XX. In this form, more detailed information is provided for point-by-point comparison of two

programs, several programs could be compared depending upon physical limits of the media used, e g , newspaper or magazine page and type size.

TABLE XX
COMPARISON OF PERSONAL FINANCIAL PLANNING
TAXPAYING MODULE TASK IMPLEMENTATION

| Taxpaying Concept Tasks | <u>Managing Your Money</u> | <u>Home Accountant Expanded</u> |
|----------------------------|--------------------------------|-------------------------------------|
| <u>Income</u> | | |
| - Taxable Items | Yes | Yes |
| - Nontaxable Items | Yes | Yes |
| - Withholding | Yes | Yes |
| - Produces Reports | Yes | No |
| <u>Expenses</u> | | |
| - Deductible Items | Yes | Yes |
| - Tax Credit Items | Yes | Yes |
| - Produces Reports | Yes | No |

Overall, it was found that all four questions had been answered through application of the methodology. It was logically determined, therefore, that a quantitative methodology for objective evaluation of personal financial planning microcomputer programs had been designed and validated.

Summary

To recapitulate the findings concerning the sample, six of the seven programs identified as the final sample were purchased, one program was no

longer available. The documentation and software of the six programs were subjected to analysis to determine the extent to which six benchmark personal finance concepts were addressed. It was found that all six included money mechanics and budgeting concepts in both documentation and software. Only one program, Managing Your Money, was found to address all six concepts to some degree. Another program covered four of the concepts and the remaining four programs each addressed three concepts. The program, which included all six benchmark concepts, was classified as a comprehensive personal financial planning program but not as a full featured one in relation to implementing all tasks of the benchmark concepts. The other five programs could be classified as basic personal financial planning programs.

The significant result of the study was the determination that an objective standard for judging personal financial planning microcomputer programs had been synthesized. When the standard is applied on a systematic basis using overt content analytic techniques, it can be said to constitute a methodology for evaluating competitive personal financial planning programs. The methodology featured an explicitly stated standard identified from the literature which was used to measure concept content in program documentation and in software implementation. The use of this explicit standard as operationalized in the Program Content Assessment Instrument provided a systematic means to assess competitive personal financial planning programs. Page counting of documentation and task counting for software implementation result in quantifiable frequency and percentage data. The effect of the method was to create objective quantitative information about different programs that was useful for qualitative decision-making about personal financial planning microcomputer programs. The information on any one program was comparable with the objectively defined standard and/or the information about another program.

It was realized during analysis of the data that the methodology did not direct a user towards one particular software program. This was because selection of the "best" or "ideal" personal financial planning software is dependent upon a number of highly individual and subjective factors. These factors range from the values, needs and wants of an individual to their familiarity with financial management and computer competency/literacy. Nevertheless, the quantitative methodology designed in the study should prove helpful to the consumer in making the selection decision based on the personal financial planning content of various micro-computer programs.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The purpose of the research was to design an objective methodology to evaluate selected personal financial planning microcomputer software using established personal finance concepts as a standard. A review of several perspectives in the literature resulted in an operational synthesis of six benchmark personal financial planning concepts. Content analysis was selected as the appropriate design for the research, with six key concepts providing the basis for the data collection instrument used in the evaluation of both microcomputer documentation and software. Data were collected from a final sample of six general personal financial planning programs drawn from a sampling frame of 57 programs.

The number of benchmark concepts addressed in the documentation and the extent of their implementation in the software of each sample program were determined through the use of the data collection instrument. Some additional features, such as graphics display of financial data and glossaries of personal finance terms, were noted in several of the programs but were not further analyzed. Otherwise, the data for each program were analyzed by frequency to obtain information about the extent to which concepts were shared among the programs in the sample.

The outcome of this analysis was that the concepts of budgeting and money mechanics were found in the documentation and software of all six

sample programs. The next most widely shared concepts were taxpaying, found in four programs, and saving/investing, found in three programs. The cost of credit was shared by two programs and insurance was in one program. It was determined from the data that none of the sample programs fully implemented all six concepts as defined in the study.

Additional analysis of the concept coverage and implementation disclosed that only one program contained all six benchmark concepts. This program, Managing Your Money, was identified as a comprehensive personal financial planning program. While none of the other five programs contained all six concepts, they did implement the budgeting and money mechanics concepts to some extent and were, therefore, identified as basic personal financial planning programs.

Conclusion

It was determined that the four primary questions posed at the outset of the process were answered through application of the methodology. It was logically concluded from this that the purpose of the study was accomplished. Specifically, it was concluded that explicit evaluation criteria or benchmarks can be stated for use in assessing personal financial planning microcomputer programs. The benchmarks used for the present study were budgeting, credit, insurance, saving/investing, money mechanics, and taxpaying. Furthermore, the restatement of the criteria in the operational synthesis devised for this study can be consistently applied to similar microcomputer programs. It was concluded that a methodology had been designed which provided objective and explicit criteria for the consistent evaluation and comparison of competitive personal financial planning microcomputer programs.

Research Recommendations

A number of points were realized during the design and execution of the study concerning personal financial planning and the use of microcomputer programs. First, the resources used to synthesize the benchmark concepts for the study were limited in perspective and purpose. There may be other viewpoints which would offer different insights for judging financial planning products. Furthermore, the detailed operational statements of the key concepts should be examined since there are multiple possibilities for defining the number, type and extent of tasks which can be logically associated with each concept. Thus, the first recommendation is for additional study on the validity and appropriateness of the concepts accepted as the criteria in this study.

In another area, the performance of a program in terms of what might be called functional efficiency was not included in the scope of this study. Although not addressed in the study, such factors as the ease of use of both reference manuals and the software, as well as the degree of integration among software modules relate to the overall utility of microcomputer programs for personal financial planning. Also beyond the scope of this study, it appeared that there was a significant potential for including more instructional "help" screens and functions for dynamic decision-making in personal financial planning programs. It seemed feasible to incorporate instruction concerning financial planning fundamentals and displays which help the consumer to readily visualize and compare the consequences of different financial decisions. Evaluation of software for such qualitative features might be specified in the future as an additional benchmark for comparing personal financial planning software. To be a

complete evaluative process, it is recommended that these factors be integrated in follow-up research

The final area of suggested research involves the basic methodology of evaluation measurement. Content analysis was selected as the design for the present study. For the type of artifact being studied, it could be equally appropriate to use an expert panel of microcomputer users to conduct the content analysis with the instrument created for this study. Another possibility would be the recasting or adaptation of the content analysis instrument into a survey-type instrument to be mailed to a wide sample of users. These variations in the evaluation process could refute, verify or improve the basic methodology. The conduct of replication studies and inclusion of the research recommendations cited should contribute to an improved information base for consumer decision-making in an expanding and complex technological marketplace.

BIBLIOGRAPHY

- "A Guide to Compuspeak " Consumer Reports (September, 1983), 48(9), pp. 486-487
- "A Hard Look at Software Reviews " Changing Times (March, 1986), 40(3), p 91.
- Aaker, D A and Day, G. S , Eds Consumerism Search for the Consumer Interest (4th ed) New York Free Press, 1982
- Account Book of Personal Records Stillwater, Oklahoma Center for Consumer Services, n d.
- Adams, G R and Schvaneveldt, J D Understanding Research Methods White Plains, New York Longman, 1985
- "Announcing the Winners of the 2nd Annual A+ Readers' Choice Awards " A+ (March, 1986), 4(3), pp 63-64
- A+ New York Ziff-Davis, 1986
- A+ Buyers Guide New York Ziff-Davis, 1985
- The Apple II Review. Vero Beach, Florida Redgate Communications, 1985
- Armstrong, E M "Sylvia Porter Goes High Tech " II Computing (February/March, 1986, 1(3), pp 78-79
- Babbie, E The Practice of Social Research (4th ed) Belmont, California Wadsworth, 1986
- Bannister, R and Monsma, C Classification of Concepts in Consumer Education (monograph 137) West Chicago, Illinois South-Western, 1982
- Bartimo, J "Money Management Software " Personal Computing (October, 1985), 9(10), pp 109-111, 113, 115, 117-119
- Bartz, A E Basic Statistical Concepts (2nd ed) Minneapolis Burgess, 1981
- Bean, E "Passing on Reviews " The Wall Street Journal (June 16, 1986), p 19D
- Bear, J. Computer Wimp Berkeley, California Ten Speed Press, 1983
- Belth, J M "Is Your Life Insurance Reasonably Priced?" The Insurance Forum (June, 1982), 9(6), pp 165-168

- Belth, J M Life Insurance A Consumer's Handbook (2nd ed) Bloomington, Indiana: Indiana University Press, 1985
- "The Best-Liked Software " Consumer Reports (September, 1985), 50(9), pp 560-563.
- "Best Seller Charts " II Computing (October/November, 1985), 1(1), p 51
- "Best Seller Charts " II Computing (February/March, 1986), 1(3), p. 89
- Brand, S , Ed Whole Earth Software Catalog for 1986 Garden City, New York: Quantum Press/Doubleday, 1985
- Brodrick, B S "Consumer Behavior Microcomputer Selection and Use " (Unpub M S thesis, Oklahoma State University, 1984)
- Bulkeley, W M "Low-Priced Financial Plans Spread But Leave Most Decisions to Buyer " The Wall Street Journal (November 22, 1985), p 29
- Byte Peterborough, New Hampshire McGraw-Hill, 1986
- Cabeceiras, J The Multimedia Library (2nd ed) New York Academic Press, 1982
- Chasen, N. H Policy Wise Glenview, Illinois Scott Foresman, 1983
- "Computerized Financial Plans How Good?" Changing Times (October, 1985), 39(10), pp 47-49, 52-53
- Consumer and Economic Education Recommendations for Policymakers Ypsilanti, Michigan Michigan Consumer Education Center, Eastern Michigan University, 1982
- Consumer Education and Family Finance Stillwater, Oklahoma Center for Consumer Services, 1978
- Consumer Education in Your School A Handbook for Teachers and Administrators Washington, D C National Association of Secondary-School Principals, 1947.
- "Consumerism Growing Through Diversity " Ninth Annual Mid-American Consumer Conference Proceedings Stillwater, Oklahoma Center for Consumer Services, 1985
- Crabb, D "Packages Prove You Get Your Money's Worth " Infoworld (April 14, 1986), 8(15), pp 26, 29-31
- Creative Computing Los Angeles: Ahl Computing, 1985
- Crowe, D B. How to Talk Money (audio tape cassette) Stamford, Connecticut Warner Audio Publishing, 1985

- Cunningham, J L and Miller, S W "The Scope of Consumer Education as Reflected in Interdisciplinary Curriculum Guides for Secondary Education Programs " 31st Annual Conference of the American Council on Consumer Interests Proceedings (1985), pp 258-264
- Davis, B "Books (on Cassette) are Better Than Ever " American Libraries (March, 1984), 15(3), pp 165-168, 170
- Davis, B. "Sizing up Software " The Wall Street Journal (December 1, 1985a), pp 36D, 38D-39D
- Davis, B "When Selecting a Computer Program, Be Skeptical, Try It Out and Ask a Pro " The Wall Street Journal (February 8, 1985b), p 19
- Deacon, R E and Firebaugh, F M Family Resource Management Boston Allyn and Bacon, 1981
- de Peyster, D , Ed "Do You Know Where Your Money Is?" Incider (April, 1986), 4(4), pp 50-51
- DiBara, P "Dollars and Sense (Review) " Incider (April, 1985), 3(4), p. 85
- Dickerson, M D and Gentry, J W "Characteristics of Adopters and Non-Adopters of Home Computers " Journal of Consumer Research (September, 1983), 10(2), pp 225-235
- Dlabay, L R "New and Emerging Topics and Techniques for the Consumer Economics/Personal Finance Curriculum " 30th Annual Conference of the American Council on Consumer Interests Proceedings (1984), pp 79-182
- Dollars and Sense Englewood, California Monogram, 1984
- Downing, D and Covington, M Dictionary of Computer Terms Woodbury, New York Barron's Educational Series, 1986
- Epstein, D G and Nickles, S. H Consumer Law in a Nutshell St Paul, Minnesota West Publishing, 1981
- Espinosa, C (Untitled presentation at the Oklahoma City Apple User's Group Applefest '86, Oklahoma City, Oklahoma, June 28, 1986)
- Ezell, M P "Computer Assisted Financial Decisions " 30th Annual Conference of the American Council on Consumer Interests Proceedings (1984), pp 206-210
- Fersko-Weiss, H "Home Budgets Without Pain " Personal Computing (April, 1985), 9(4), pp 50-51, 53, 55, 57, 59
- Field, C E "Mouse Budget (Review) " Incider (February, 1986), pp 51, 54-55
- "Financial Planners What are They Really Selling?" Consumer Reports (January, 1986), 51(1), pp 37-38

- First National Consumer Education Roundtable (pamphlet) Washington, D C · Zayre Corp , with U S Office of Consumer Affairs, 1985
- Gillies, J Moneylove (audio tape cassette) Stamford, Connecticut Warner Audio Publishing, 1985
- Glau, G "Cash Cruncher " Incider (May, 1986), 4(5), pp 29-30, 32
- Glossbrenner, A How to Buy Software New York St Martin's Press, 1984
- Goodman, J E and Brevdy, J "25 Top Personal Finance Programs " Money (November, 1984), 13(11), pp 230, 232, 234, 236, 238, 240, 242, 244, 246
- Guerra, B "Andrew Tobias' Managing Your Money " Computer's Apple Applications (Spring/Summer, 1986), 2(3), pp 70, 72
- Hafstrom, J L "Family Resource Management and Microcomputer Applications." Workshop on Computer Applications for Family Financial management Professionals Proceedings, 1985, n.p
- Hearn, E L "An Assessment of Consumer Education in Oklahoma Secondary Schools and the Impact of the Economic Recovery Act of 1974 " (Unpub Ph D dissertation, Oklahoma State University, 1980)
- Hecht, D Y Books on Tape (catalog) Newport Beach, California Books on Tape, 1982
- Hoffman, N and Brobeck, S The Bank Book San Diego Harcourt, Brace and Jovanovich, 1986
- Holsti, O R Content Analysis for the Social Sciences and Humanities. Reading, Massachusetts Addison-Wesley, 1969
- Home Accountant Expanded Los Angeles Arrays, Inc /Continental Software, 1985.
- "How Our Readers are Using Computers " Consumer Reports (September, 1983), 48(2), pp 470-471
- Hudson Strategy Group Financial Services Innovation and the American Consumer New York American Express, 1982
- Huff, D and Geis, I How to Lie With Statistics New York: W W Norton, 1982
- Hunt, J H How to Save Money on Life Insurance Alexandria, Virginia National Insurance Consumer Organization, 1984
- "Incider's Ratings " Incider (June, 1985), 3(6), p 86
- "Incider's Ratings " Incider (January, 1986), 4(1), p 64
- InfoWorld (January 27, 1986), 8(4), p 35

- Johnston, W L ; D'Ambrosio, A , Gaston, N , Kirman, A M , and Matejic, D M Personal Money Management Guidelines for Teaching New York New York Stock Exchange, 1974
- Jones, M G "Wanted Consumer Perspectives on the New Technologies " Consumerism and Beyond Research Perspectives on the Future Social Environment, Conference Proceedings Cambridge Massachusetts Marketing Science Institute, 1982
- Kautz, J F R "Attitudes of Selected Computer Owners About Privacy, Security and the Interactive Computer System " (Unpub master's thesis, Oklahoma State University, 1984)
- Krech, D , Crutchfield, R S , and Balalchey, E L Individual in Society New York McGraw-Hill, 1962
- Krejcie, R F and Morgan, D W "Determining Sample Size for Research Activities." In. Handbook in Research and Evaluation, S Isaac and W B Michael, Eds (2nd ed) San Diego Edits, 1983
- Krippendorff, K Content Analysis An Introduction to Its Methodology Beverly Hills, California. SAGE Publications, 1980
- Landis, K "Getting Organized" (Review) A+ (December, 1984), 2(12), pp 185-187
- Landis, K "Quicken" (Review) A+ (January, 1986), 4(1), pp 68-70
- Landis, K "To Buy or to Lease" (Review) A+ (May, 1985), 3(5), pp 85-88
- Lang, L R and Gillespie, T H Strategy for Personal Finance (2nd ed) New York McGraw-Hill, 1981
- Lang, L R and Gillespie, T H Strategy for Personal Finance (3rd ed) New York. McGraw-Hill, 1984
- Lee, S M., Ed "Financial Cookbook" (Review) American Council on Consumer Interests Newsletter (March, 1986), n p
- "Looking for Mr Goodplan " Consumer Reports (January, 1986), 51(1), pp. 39-44
- Lucht, L. L , Ed "A Guide for Evaluating Consumer Education Programs and Materials " American Home Economics Association, n.d , n p
- Malnoy, A "Roundup of Financial Software " II Computing (February/March, 1986), 1(3), pp 74-76.
- Managing Your Money (Andrew Tobias) Westport, Connecticut. Micro Education Corporation of America, 1985
- McWilliams, P A The Personal Computer Book (2nd ed) Los Angeles. Prelude Press, 1983

- Miller, R L Economic Issues for Consumers (4th ed) St Paul, Minnesota: West Publishing, 1984
- Minium, E W Statistical Reasoning in Psychology and Education (2nd ed) New York: John Wiley and Sons, 1978
- Naisbitt, J Megatrends New York Warner Books, 1982
- The 1985 Educational Software Preview Guide. Sacramento, California California State Department of Education, 1985.
- No-Nonsense Financial Guides Stamford, Connecticut Longmeadow Press, 1984.
- Norman, S "Your Personal Net Worth (Review) " InCider (May, 1985), 3(5), pp 87-88
- Personal Accountant New York Softsync, 1984
- "Personal Finance " The Home Software Catalog n p Soft Kat, 1985
- "Personal Finance Software." The Apple II Review (Winter, 1985), pp 55-56, 58-59.
- Porter, S Sylvia Porter's Money Book Garden City, New York Doubleday, 1976.
- Robinson, S B. Microcomputer Software and the Social Studies Boulder, Colorado Clearinghouse for Social Studies/Social Science Education (December, 1982)
- Rosefsky, R S Personal Finance (3rd ed) New York John Wiley and Sons, 1985
- Rowse, A. E Help The Useful Almanac for 1977-1978 Washington, D C Consumer News, 1977
- Scannell, E "Computer Jargon Activity" (leaflet) Cooperative Extension Service, University of North Dakota and U S Department of Agriculture
- Schiller, M K Personal and Family Finance Boston. Allyn and Bacon, 1981.
- "75 Best Sellers." SoftGuide (October/November, 1985), p 20
- Slater, K "Financial Seminars are Often More of a Sales Pitch Than an Education " The Wall Street Journal (November 21, 1985), p 31
- SoftGuide Lawrence, Massachusetts First Software, 1985
- Softtalk North Hollywood, California Softtalk Publishing, 1984
- "The Software and Accessories Directory " SoftGuide The Buyers Guide (October/November, 1985), pp 21-40

- Software Reports San Diego Trade Service Publications, 1984
- "Software Survey " Consumer Reports (February, 1985), 50(2), pp 79-80
- "Software That Does the Hard Work " Changing Times (June, 1986), 40(6), pp 71-75.
- Stephenson, M J "Current Trends in the Financial Service Industry A Need for Academic Involvement " 30th Annual Conference of the American Council on Consumer Interests Proceedings, (1984) pp 252-255
- Swearengin, R D "General Electric's 3-8100 Printer " Byte (May, 1986), 11(5), pp 293-295
- Tobias, A The Invisible Bankers New York Pocket Books, 1982
- Tobias, A The Only Investment Guide You'll Ever Need (2nd ed) New York Bantam Books, 1983
- Toong, H D and Gupta, A "Personal Computers " Scientific American (December, 1982), pp 87-88, 92, 94, 96, 99-100, 102-104, 106-107
- Trujillo, G R Consumer and Economic Education, K-12 A Comparative Analysis. Washington, D C • U S Office of Consumer Education, 1977.
- II Computing San Francisco. Antic Publishing, 1985
- Van Dalen, D B Understanding Educational Research New York McGraw-Hill, 1979
- "What Home Computers Can Do " Consumer Reports (September, 1983), 48(9), pp 464-465
- Wilhelms, F T Teaching Consumer Education A Common-Sense Approach (monograph) Edison, New Jersey Center for Consumer Education Services, 1974
- Williams, F "Current Issues in Financial Counseling " In Troubleshooter Training Manual (4th ed), B. Kellar and N Nolf, Eds Norfolk, Virginia Navy Family Services Center, 1984
- "The Winners of the 1985 A+ Readers' Choice Software Awards " A+ (March, 1985), 3(3), p 158
- "Your Home Computer as Home Accountant " Consumer Views (Citicorp) (February, 1984), 15(2), n p
- Your Money Manager (J K Lasser's) New York Simon and Schuster, n d
- Your Personal Financial Planner (Sylvia Porter's) Deerfield, Illinois Timeworks, 1984
- Your Personal Net Worth Tarrytown, New York Scarborough Systems, 1984

APPENDIXES

APPENDIX A
HEARN'S CONTENT ASSESSMENT OF SELECTED
CONSUMER EDUCATION MATERIALS

HEARN'S TABLE OF CONSUMER EDUCATION CONCEPTS
(SELECTED TEXTBOOKS)

CONSUMER EDUCATION CONCEPTS INCLUDED IN
SELECTED TEXTBOOKS

| TRUJILLO CONCEPTS | Hallard T E D L & Kaiser, R W | Behr M R & Nelson, D L | Burda E T | Edmonds CP III | Garman E T & Eckert S W | Gordon L J & Lee S H | Hastings, P & Mecus, N | Lang L R & Gillespie, I N | Levy, L, Feldman R, & Sasserath, S | McGowan D A | Miller R L Pers Finance | Miller, R L Eco Issues | Oppenheim I | Rathall, D T | Stillman, R J | Thal, H M & Holcombe, H | Time-Life Books | Froststrup & Hall | Trooboff, B J & Boyd, F | Warneke R F & Wyllie, E D | TOTAL | |
|--------------------------------|----------------------------------|---------------------------|-----------|----------------|----------------------------|-------------------------|---------------------------|------------------------------|---------------------------------------|-------------|----------------------------|---------------------------|-------------|--------------|---------------|----------------------------|-----------------|-------------------|----------------------------|------------------------------|-------|----|
| GOALS | X | X | | | | | X | X | | | | | | | | | | | | | 3 | |
| VALUES | | X | | | | | | | | | | | | | | | | | | | | 5 |
| UTILITY | | | | | X | X | | | X | X | | X | | | | | | X | | | | |
| ADVERTISING | | | | | X | X | | | X | X | | X | | | | | | | | | | |
| LIFESTYLE | | | | | | | X | X | | | | | | X | | X | | X | X | | | 6 |
| DECISIONMAKING | | X | | | | | | | | | | | X | | X | X | | X | X | | | 6 |
| CONSUMER SURPLUS | | | | X | | | X | | | | | | | | | | | | | X | | 3 |
| FINANCIAL RECORDS | X | | X | X | X | X | X | X | X | | | X | X | X | X | X | X | X | X | | | |
| NET WORTH | X | X | X | X | | | | X | | | X | | | X | X | | | X | | | | 9 |
| BUDGETS AS PLANS | X | | | X | X | X | X | X | X | | X | X | X | X | X | X | X | X | X | | | 16 |
| PLANNING | X | X | X | | X | X | X | X | X | | X | X | X | X | X | X | X | X | X | | | 16 |
| CONSUMER RESOURCES | X | | | X | X | X | X | X | X | X | X | X | | | X | X | | X | X | X | | 15 |
| BORROWING | X | | | X | X | X | X | | X | X | X | | X | X | X | X | X | X | X | X | | 16 |
| OWN VS RENT | X | | | | X | | X | X | | | | | X | | X | X | X | X | X | | | 10 |
| RETIREMENT | X | | X | X | | | X | | | | X | X | | | X | X | X | X | | | | 10 |
| ESTATE PLANNING | X | X | X | X | X | | X | X | | X | X | X | X | X | X | X | | X | X | X | | 16 |
| TAX PLANNING | X | | X | X | X | | X | X | | X | X | X | X | X | X | X | X | X | X | X | | 16 |
| BUYERSHIP | | | X | | X | X | | X | X | | X | X | | | X | X | | X | X | X | | 12 |
| RIGHTS AND RESPONSIBILITIES | | | X | X | X | X | X | X | X | X | X | X | | | X | | | X | X | X | | 14 |
| ROLE OF BUSINESS & ADVERTISING | | | | | | X | | | X | | | | | | | | | X | | X | | 4 |
| VALUE OF DOLLAR | | | | | | X | | | | | | | | | | | | | | | | 1 |
| VOTES | | | | | | X | | | | | | | | | | | | | | | | 1 |
| PRICING | | | | | | X | | | | X | | | | | | | X | | | | | 3 |
| TECHNOLOGY | | | | | | | | | | | | | | | | | | | | | | 0 |
| CONSUMER ADVOCACY | | | X | | | | | | X | X | X | | | | X | | | X | | | | 6 |
| CREDIT | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | 18 |
| INSURANCE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | 20 |

Source E L Hearn, "An Assessment of Consumer Education in Oklahoma Secondary Schools and the Impact of the Economic Recovery Act of 1974" (1980)

SOURCES FOR HEARN'S TABLE OF CONSUMER EDUCATION CONCEPTS
(SELECTED TEXTBOOKS)

- Baillard, T E , Biehl, D L , and Kaiser, R W Personal Money Management Chicago Science Research Associates, Inc , 1973
- Behr, M R and Nelson, D L Economics A Personal Consumer Approach Reston, Virginia Reston Publishing Co , 1975
- Burda, E T Consumer Finance New York Harcourt, Brace, Jovanovich, Inc , 1975
- Edmonds, C P Essentials of Personal Finance Santa Monica, California Goodyear Publishing Co , 1979
- Garmon, E T and Eckert, S W The Consumer's World Buying, Money Management, and Issues New York McGraw-Hill Book Co , 1974
- Gordon, L J and Lee, S M Economics for Consumers New York D Van Nostrand Co , 1977
- Hastings, P and Mietus, N Personal Finance (2nd ed) New York McGraw-Hill Book Co , 1977
- Lang, L R and Gillespie, T H Strategy for Personal Finance New York McGraw-Hill Book Co , 1977
- Levy, L , Feldman, R and Sasserath, S The Consumer in the Marketplace (2nd ed) Belmont, California Feron-Pitman Publishing, Inc , 1976
- McGowan, D A Consumer Economics Chicago Rand McNally College Publishing Co , 1978
- Miller, R L Economic Issues for Consumers (2nd ed) St Paul, Minneapolis West Publishing Co , 1978
- Miller, R L Personal Finance Today St Paul, Minneapolis West Publishing Co , 1979
- Oppenheim, I The Family as Consumers New York The Macmillan Co , 1965
- Rahall, D T Family Finance New York Educational Associates, 1969
- Smith, C and Pratt, R P The Time-Life Book of Family Finance New York Time-Life Books, 1979
- Stillman, R J Guide to Personal Finance (2nd ed) Englewood Cliffs, New Jersey Prentice-Hall, Inc , 1975
- Thal, H M and Holcombe, M Your Family and Its Money (Rev ed) Boston Houghton-Mifflin Co , 1973
- Troelstrup, A W and Hall, E C The Consumer in American Society (6th ed) New York McGraw-Hill Book Co , 1978
- Trooboff, B J and Boyd, F L Personal Finance for Consumers Morristown, New York General Learning Press, 1976
- Warmke, R F and Wyllie, E D Consumer Economic Problems Cincinnati, Ohio Southwestern Publishing Co , 1977

HEARN'S TABLE OF CONSUMER EDUCATION CONCEPTS
(CURRICULUM GUIDES AND STUDIES)

CONSUMER EDUCATION CONCEPTS INCLUDED IN SELECTED
CURRICULUM GUIDES AND STUDIES

| TRUJILLO CONCEPTS | OK Eco Ed Curr Guide | Hawaii C E Continuum | C E , Texas Curr Guide | Ill C E Guidelines | N J Survey of C E Guidelines | E C S Study | Purdue Study | Attitudes of Ken Teachers | Ken Teachers Ratings | C E in Wis | C E in Your School | CEEP Proposed Concepts | TOTAL |
|-----------------------------------|-------------------------|-------------------------|---------------------------|-----------------------|---------------------------------|-------------|--------------|------------------------------|-------------------------|------------|--------------------|---------------------------|-------|
| GOALS | | X | X | X | | | X | | X | | | | 5 |
| VALUES | | X | X | X | | | X | | | | | X | 5 |
| UTILITY | X | | | X | | X | X | | X | | | X | 6 |
| ADVERTISING | | X | | X | | X | X | X | X | | X | | 7 |
| LIFESTYLE | X | X | X | X | | X | X | | X | | | | 6 |
| DECISION MAKING | X | X | X | X | X | X | X | | | X | | X | 9 |
| CONSUMER SURPLUS | | | | | | | X | | | | | | 1 |
| FINANCIAL RECORDS | | | | X | | X | X | | | | X | X | 5 |
| NET WORTH | X | | | X | | X | X | | | | | | 4 |
| BUDGETS AS PLANS | X | X | X | X | X | X | X | | X | X | X | X | 11 |
| PLANNING | | X | X | X | | X | X | | X | | X | X | 8 |
| CONSUMER RESOURCES | | | X | X | | | X | | X | X | X | X | 7 |
| BORROWING | X | X | | X | | X | X | | X | | | | 6 |
| OWN VS RENT | | | X | X | X | X | X | | X | X | | | 7 |
| RETIREMENT | | X | X | | | | X | | X | | | | 4 |
| ESTATE PLANNING | | | | | | | X | X | | | | | 2 |
| TAX PLANNING | | X | X | X | | X | X | | X | X | | | 7 |
| BUYMANSHIP | | X | X | X | X | X | X | | X | X | | | 8 |
| RIGHTS AND RESPONSIBILITIES | | X | X | X | X | X | X | X | X | X | | X | 10 |
| ROLE OF BUSINESS & ADVERTISING | | X | | | | | X | X | | X | | | 4 |
| VALUE OF DOLLAR VOTES | X | | | | | | X | X | | | X | | 4 |
| PRICING | X | | | | | | X | X | | | X | | 4 |
| TECHNOLOGY | X | X | | | | | | | | | | | 2 |
| CONSUMER ADVOCACY | | X | | X | | X | | X | X | | | X | 6 |
| CREDIT | X | X | X | X | X | X | X | X | X | X | | | 10 |
| INSURANCE | | X | X | X | X | X | X | X | X | X | | | 9 |

Source E L Hearn, "An Assessment of Consumer Education in Oklahoma Secondary Schools and the Impact of the Economic Recovery Act of 1974" (1980)

SOURCES FOR HEARN'S TABLE OF CONSUMER EDUCATION CONCEPTS
(CURRICULUM GUIDES AND STUDIES)

- Consumer Education Project Hawaii Consumer Education Continuum, Grades Kindergarten-Twelve Hawaii State Department of Education, no date
- Consumer Education Study Consumer Education in Your School A Handbook for Teachers and Administrators Washington, D C National Association of Secondary School Principals, 1947
- Davis, R M Attitudes of Kentucky Secondary Teachers Toward Consumer Issues and Emphasis Given These Issues (Doctoral dissertation, Kansas State University) Ann Arbor, Michigan University Microfilms, 1979, No 73-26
- Hockman, I and Pena, R Survey of Consumer Education and Survey of Opinions of Secondary School Administrators Regarding Proposed Criteria for Consumer Education Programs in New Jersey Public Secondary Schools Bergen Community College, 1976
- Home Economics Instructional Materials Center Consumer Education (for Specialized Course) Austin Texas Education Agency, 1977
- Office of the Superintendent of Public Instruction, State of Illinois Guidelines for Consumer Education 1972
- Quinn, P J Consumer Education in Wisconsin Public Secondary Schools and Universities and a Comparison of Opinions Held by Wisconsin Secondary School and University Teachers Toward Selected Consumer Education Issues (Doctoral dissertation, Northern Illinois University) Ann Arbor, Michigan University Microfilms, 1979, No 77-12
- State Economic Education Committee and Oklahoma Council for Economic Education Economic Education Curriculum Guide (K-12) Oklahoma State Department of Education, 1976
- Swope, J A Kentucky Teacher Ratings of Importance and Emphasis for Consumer Education Topics (Doctoral dissertation, University of Kentucky) Ann Arbor, Michigan University Microfilms, 1979, No 77-15
- Uhl, J N The Purdue consumer education study some findings and implications Journal of Consumer Affairs, 1970, 4, 124-134
- Wilcox, S D The Educated Consumer An Analysis of Curriculum Needs in Consumer Education Ypsilanti, Michigan Consumer Education Development Program, 1979
- Wilhelms, F T (Ed) Consumer Education Project Final Report Denver, Colorado Education Commission of the States, 1979

APPENDIX B

PROGRAM CONTENT ASSESSMENT INSTRUMENT

PROGRAM CONTENT ASSESSMENT INSTRUMENT

PART ONE PROGRAM IDENTIFICATION

(Bibliographic Entry)

List Price Acquisition Price

PART TWO PROGRAM DOCUMENTATION CONTENT

| Personal Finance Management Topic | Page Count |
|-----------------------------------|------------|
| 1 Budgeting | _____ |
| 2 Cost of Credit | _____ |
| 3 Insurance | _____ |
| 4 Saving/Investing | _____ |
| 5 Money Mechanics | _____ |
| 6 Taxpaying | _____ |
| 7 Other _____ | _____ |
| 8 Other _____ | _____ |

PART THREE SOFTWARE CONCEPT IMPLEMENTATION

For each of the concepts analyzed in the following sections

A value of 1 is assigned when a concept is implemented

A value of 0 is assigned when a concept is not implemented

1 Budgeting

- a Estimate Income
 - 1) Sources and Gross Amounts _____
 - 2) Mandatory Deductions _____
 - 3) Optional Deductions _____
 - 4) Compute Available Income _____

- b Estimate Expenses
 - 1) Regular Living Expenses _____
 - 2) Occasional Expenses _____
 - 3) Saving/Investing Expenses _____

- c Summarize Budget
 - 1) Planned - Actual Data _____
 - 2) Calculates Net Cash Flow _____

Comments

2 Cost of Credit

- a Cash/Sales Loans
 - 1) Calculates APR _____
 - 2) Calculates Payments _____
 - 3) Calculates Total Cost _____

- b Rule of 78 Rebate Penalty _____

- c Revolving Credit
 - 1) Previous Balance _____
 - 2) Average Daily Balance _____
 - 3) Adjusted Balance _____

- d Produces Loan Amortization Schedule _____

Comments

3 Insurance

- a Life Insurance
 - 1) Needs Method -----
 - 2) Analyze Cash Value Costs -----
 - 3) Analyze Term Costs -----

- b Casualty/Inability
 - 1) Calculate 80% of Replacement Value -----

- d Disability/Health Coverages
 - 1) Calculates 60%-70% of pre-disability income -----

Comments

4 Saving/Investing

- a Single Pay (Lump Sum) Investment
 - 1) Dollar Amount Deposited/Invested -----
 - 2) Interest Rate -----
 - 3) Maturity -----
 - 4) Compounding
 - a) Annual -----
 - b) Monthly -----
 - c) Other -----
 - 5) Inflation Rate Estimate -----
 - 6) Terminal Value -----

- b Periodic Investment
 - 1) Amount Deposited/Invested -----
 - 2) Investment Frequency
 - a) Annual -----
 - b) Monthly -----
 - c) Other -----
 - 3) Interest Rate -----
 - 4) Maturity -----
 - 5) Compounding
 - a) Annual -----
 - b) Monthly -----
 - c) Other -----
 - 6) Inflation Rate Estimate -----
 - 7) Terminal Value -----

Comments

5 Money Mechanics

- a Account Management
 - 1) Record Deposits _____
 - 2) Record Withdrawals/Charges _____
 - 3) Balance Account _____
 - 4) Write Checks _____

- b Financial/Family Records
 - 1) Personal Property Inventory _____
 - 2) Insurance Policies _____
 - 3) Financial Assets _____
 - 4) Financial Liabilities _____
 - 5) Family Vital Statistics _____
 - 6) Family Papers Locator _____

- c Reporting
 - 1) Income Statement _____
 - 2) Net Worth Statement _____

Comments

6 Taxpaying

- a Income Items
 - 1) Designates Taxable Items _____
 - 2) Designates Non-Taxable Items _____
 - 3) Designates Withholding _____
 - 4) Produces Report _____

- b Expense Items
 - 1) Designates Deductible Items _____
 - 2) Designates Tax Credit Items _____
 - 3) Produces Report _____

Comments

SOFTWARE CONCEPT IMPLEMENTATION
BENCHMARK VALUES

Point values assigned represent the sum of the implementing tasks specified for each area of a concept in the software content assessment portion of the data collection instrument

| Concept/Tasks | Point Value |
|-------------------------------------|-------------|
| Budgeting | |
| Estimate Income | 4 |
| Estimate Expenses | 3 |
| Summarize Budget | 2 |
| Subtotal | 9 |
| Cost of Credit | |
| Cash/Sales Loans | 3 |
| Rule of 78 Rebate Penalty | 1 |
| Revolving Credit | 3 |
| Produces Loan Amortization Schedule | 1 |
| Subtotal | 8 |
| Insurance | |
| Life Insurance | 3 |
| Casualty/Liability | 1 |
| Disability/Health Coverages | 1 |
| Subtotal | 5 |
| Saving/Investing | |
| Single Pay (Lump Sum) Investment | 8 |
| Periodic Investment | 11 |
| Subtotal | 19 |
| Money Mechanics | |
| Account Management | 4 |
| Financial/Family Records | 6 |
| Reporting | 2 |
| Subtotal | 12 |
| Taxpaying | |
| Income Items | 4 |
| Expense Items | 3 |
| Subtotal | 7 |
| Total Points | 60 |

APPENDIX C
REPRESENTATIVE FAMILY FINANCIAL DATA

REPRESENTATIVE PERSONAL FINANCIAL DATA

Part One Family Financial Goals, Records, and Property

Richard D and Jane L Johnson
1108 Rolling Rock Lane
Rural City, US 77777

Item Name College Fund - Child A
Date Acquired Sep 1 07
Acquisition Value \$3,200 x 4 years = \$12,800
Type Item Goal
Remarks Value is current estimated cost

Item Name College Fund - Child B
Date Acquired Sep 1 10
Acquisition Value \$3,200 x 4 years = \$12,800
Type Item Goal

Remarks Value is current estimated cost
Item Name Retirement - Jane
Date Acquired Jul 4 27
Acquisition Value \$21,000
Type Item Goal
Remarks Value is current purchasing power

Item Name Retirement - Richard
Date Acquired Jul 4 27
Acquisition Value \$26,000
Type Item Goal
Remarks Value is current purchasing power

Item Name Sailboat
Date Acquired Apr 15 90
Acquisition Value \$8,000 current price
Type Item Goal

Item Name Richard \$100,000 Annual Renewable Term - Berkman Life
Date Acquired Jan 31 82
Acquisition Value \$130 00 Current Annual Cost
ID Number 587831
Type Item Insurance Policy

Item Name Jane \$50,000 Annual Renewable Term - Berkman Life
Date Acquired Jan 31 82
Acquisition Value \$95 00 Current Annual Cost
ID Number 587830
Type Item Insurance Policy

Item Name Homeowner Policy Form HO3 - Standard Company
Date Acquired Jun 1 82
Acquisition Value \$52,000
ID Number 4/65129
Type Item Insurance Policy

Item Name Auto Insurance
Date Acquired Aug 15 83
Acquisition Value \$300 00 Current Annual Cost
ID Number 83-29075A
Type Item Insurance Policy
Remarks 300/500/50 (Driver Ed + No Accident Bonus)

Item Name Common Stock
Date Acquired Jun 15 81
Acquisition Value 100 shares at \$20 per share
ID Number Second Security Corp Account 9735-81
Type Item Investment
Remarks Received as wedding gift from Uncle Bob

Item Name IRA C/D Richard for 1983
Date Acquired Jan 7 84
Acquisition Value \$1,000 at 10%
ID Number 83-04377
Type Item Investment

Item Name IRA C/D Jane for 1983
Date Acquired Jan 7 84
Acquisition Value \$1,000 at 10%
ID Number 83-04376
Type Item Investment

Item Name IRA C/D Richard for 1984
Date Acquired Jan 4 85
Acquisition Value \$1,000 at 10%
ID Number 84-04377
Type Item Investment

Item Name IRA C/D Jane for 1984
Date Acquired Jan 4 85
Acquisition Value \$1,000 at 10%
ID Number 84-04376
Type Item Investment

Item Name IRA C/D Richard for 1985
Date Acquired Jan 6 86
Acquisition Value \$1,000 at 10%
ID Number 85-04377
Type Item Investment

Item Name IRA C/D Jane for 1985
Date Acquired Jan 6 86
Acquisition Value \$1,000 at 10%
ID Number 85-04376
Type Item Investment

Item Name Mortgage
Date Acquired Aug 15 82
Acquisition Value \$45 000 loan at 12 5% rate
ID Number 82CCM986512
Type Item Liability

Item Name Safe Deposit Box
Date Acquired Jan 7 83
ID Number 1492
Remarks Used to store investment securities and other vital papers

Item Name Birth Certificate - Richard
Date of Birth Febiuary 3, 1960
ID Number Certificate No 421678, State of Connecticut
Type Item Personal Papers

Item Name Birth Certificate - Jane
Date of Birth March 19, 1962
ID Number Certificate No 679012F, State of Pennsvlvania
Type Item Personal Papers

Item Name Marriage Certificate
Date Acquired Jun 15 81
ID Number Franklin County, Ohio Certificate 8105166-1896
Type Item Personal Papers

Item Name Deed to Home
Date Acquired Aug 15 82
ID Number 497865-8?AA189
Type Item Personal Papers

Item Name Will for Jane
Date Acquired Sep 15 82
Type Item Personal papers
Remarks In safe deposit box

Item Name Will for Richard
Date Acquired Sep 15 82
Type Item Personal papers
Remarks In safe deposit box

Item Name Sofa
Date Acquired May 1 82
Acquisition Value \$1,000
Type Item Personal Property

Item Name Easy Chairs
Date Acquired Jun 12 83
Acquisition Value \$1,000
Type Item Personal Property

Item Name Automobile
Date Acquired Aug 15 83
Acquisition Value \$12 000 00
ID Number 34M28526J27
Type Item Personal Property
Remarks Credit Union has title original, duplicate is in file

Item Name Lamps
Date Acquired Apr 6 84
Acquisition Value \$350 00
Type Item Personal Property

Item Name TV/VCR
Date Acquired Dec 25 85
Acquisition Value \$750 00
ID Number J1-459-82-7654/122585 and J2-459-82-7654/122585
Type Item Personal Property

Item Name Home
Date Acquired Aug 15 82
Acquisition Value \$50,000
Type Item Real Property

Item Name Paneling and Built-in Bookcases
Date Acquired May 19 85
Acquisition Value \$1,500
ID Number None - receipts in household file
Type Item Real Property (Improvement)

Item Name Trees
Date Acquired Feb 12 86
Acquisition Value \$300 00
Type Item Real Property (Improvement)

Part Two Income Items

Income Source Williams Manufacturing Co
 Payable To Richard D Johnson
 Gross Amount Gross Pay for January 1986 \$1,500 00
 Deduction 1 Federal Income Tax Withheld \$ 120 00
 Deduction 2 State Income Tax Withheld \$ 45 00
 Deduction 3 Social Security Contribution \$ 90 00
 Deduction 4 Pension Contribution \$12 00
 Deduction 5 Employee Health Maintenance Plan \$ 17 00
 Net Amount January 1986 Net Pay \$1216 00

Income Source Williams Manufacturing Co
 Payable To Richard D Johnson
 Gross Amount Gross Pay for February 1986 \$1,500 00
 Deduction 1 Federal Income Tax Withheld \$ 120 00
 Deduction 2 State Income Tax Withheld \$ 45 00
 Deduction 3 Social Security Contribution \$ 90 00
 Deduction 4 Pension Contribution \$12 00
 Deduction 5 Employee Health Maintenance Plan \$ 17 00
 Net Amount February 1986 Net Pay \$1216 00

Income Source Williams Manufacturing Co
 Payable To Richard D Johnson
 Gross Amount Gross Pay for March 1986 \$1,500 00
 Deduction 1 Federal Income Tax Withheld \$ 120 00
 Deduction 2 State Income Tax Withheld \$ 45 00
 Deduction 3 Social Security Contribution \$ 90 00
 Deduction 4 Pension Contribution \$12 00
 Deduction 5 Employee Health Maintenance Plan \$ 17 00
 Net Amount March 1986 Net Pay \$1216 00

Income Source Information Management Systems
 Payable To Jane L Johnson
 Gross Amount Gross Pay for January 1986 \$1,000 00
 Deduction 1 Federal Income Tax Withheld \$ 104 00
 Deduction 2 State Income Tax Withheld \$ 41 00
 Deduction 3 Social Security Contribution \$ 77 00
 Deduction 4 Pension Plan Contribution \$ 23 00
 Deduction 5 Major Medical Plan \$20 00
 Net Amount January 1986 Net Pay \$ 735 00

Income Source Information Management Systems

Payable To Jane L Johnson

Gross Amount Gross Pay for February 1986 \$ 900 00

Deduction 1 Federal Income Tax Withheld \$ 93 00

Deduction 2 State Income Tax Withheld \$ 34 00

Deduction 3 Social Security Contribution \$ 70 00

Deduction 4 Pension Plan Contribution \$ 18 00

Deduction 5 Major Medical Plan \$20 00

Net Amount February 1986 Net Pay \$ 665 00

Income Source Information Management Systems

Payable To Jane L Johnson

Gross Amount Gross Pay for March 1986 \$1,000 00

Deduction 1 Federal Income Tax Withheld \$ 104 00

Deduction 2 State Income Tax Withheld \$ 41 00

Deduction 3 Social Security Contribution \$ 77 00

Deduction 4 Pension Plan Contribution \$ 23 00

Deduction 5 Major Medical Plan \$20 00

Net Amount March 1986 Net Pay \$ 735 00

Income Source Information Management Systems

Payable To Jane L Johnson

Gross Amount US Savings Bond \$100 00 face value

Net Amount Net Purchase Value \$ 50 00

Remarks Holiday Sales Bonus

Income Source Williams Federal Employee Credit Union

Payable To Richard D and Jane L Johnson

Gross Amount Quarterly Interest Payment \$ 90 00

Net Amount Quarterly Interest Payment Credited as of March 31,
1986 \$ 9

Remarks \$3,000 Certificate of Deposit at 12% interest

Income Source Synergetics Corporation

Payable To Richard D and Jane L Johnson

Gross Amount Quarterly Dividend \$ 60 00

Net Amount Quarterly Dividend Paid March 15, 1986 \$60 00

Remarks Dividend declared for owners of record 2/28/86

Part Three Expense Items (Chronological)

| | | |
|--------------|-------------------|----------------|
| Type Check | Date Jan 7 86 | Amount \$68 00 |
| To Superette | Purpose Groceries | |

| | | |
|--|--|-----------------|
| Type Cash To Bill's Service | Date Jan 12 86 Purpose Gasoline | Amount \$20 00 |
| Type Check To Superette | Date Jan 13 86 Purpose Groceries | Amount \$68 00 |
| Type Check To Credit Union | Date Jan 17 86 Purpose Cash - Pocket money | Amount \$20 00 |
| Type Check To SuperCard Interest \$ 33 | Date Jan 20 86 Purpose Charges Nov 85 | Amount \$22 33 |
| Type Check To Superette | Date Jan 21 86 Purpose Groceries | Amount \$68 00 |
| Type SuperCard To Hanbrough | Date Jan 22 86 Purpose Jane - Blouse | Amount \$15 00 |
| Type Check To C and F Mortgage Co Principal \$50 00 Interest \$475 00 Taxes \$75 00 Insurance \$14 00 | Date Jan 25 86 Purpose Payment Due Feb 1 | Amount \$614 00 |
| Type Check To Everystate Insurance | Date Jan 26 86 Purpose Insurance for car | Amount \$50 00 |
| Type Check To IMS Credit Union Principal \$90 00 Interest \$20 00 | Date Jan 27 86 Purpose Auto Loan Payment | Amount \$110 00 |
| Type Check To The Electric Company | Date Jan 27 86 Purpose Electric Service | Amount \$30 00 |
| Type Check To The Gas Company | Date Jan 27 86 Purpose Gas Service | Amount \$70 00 |
| Type Check To Bob's Market | Date Jan 28 86 Purpose Groceries | Amount \$69 00 |
| Type Check To Telephone Company long distance) | Date Jan 28 86 Purpose Local Service + (\$12 00 for | Amount \$32 00 |
| Type Check To City Services | Date Jan 28 86 Purpose Water/Sewer/Waste | Amount \$28 00 |

| | | |
|--|--|----------------|
| Type Check To Bill's Service | Date Jan 29 86 Purpose Gasoline, oil change and new tire | Amount \$60 00 |
| Type Cash To Rivoli | Date Jan 29 86 Purpose Movie | Amount \$14 00 |
| Type Check To Shepard Grove Church | Date Jan 30 86 Purpose Monthly Pledge | Amount \$40 00 |
| Type Check To Credit Union | Date Jan 31 86 Purpose Cash - Miscellaneous | Amount \$20 00 |
| Type Account Debit To Savings Account 02 Vacation Fund | Date Jan 31 86 Purpose Emergency, Repair and | Amount \$71 00 |
| Type Account Debit To Account 04 | Date Jan 31 86 Purpose IRA - Jane | Amount \$30 00 |
| Type Account Debit To Account 03 | Date Jan 31 86 Purpose IRA - Richard | Amount \$30 00 |
| Type Check To Alice's Restaurant | Date Feb 3 86 Purpose Dinner Party with Mastermans | Amount \$30 00 |
| Type Check To Bob's Market prescription | Date Feb 3 86 Purpose Groceries + \$17 00 for | Amount \$78 00 |
| Type Check To Dr McCoy culture | Date Feb 3 86 Purpose Office visit and throat | Amount \$30 00 |
| Type Check To Bill's Service | Date Feb 6 86 Purpose Gasoline | Amount \$20 00 |
| Type Check To Credit Union | Date Feb 7 86 Purpose Cash - personal expenses | Amount \$60 00 |
| Type SuperCard To Hanborough | Date Feb 7 86 Purpose Jane - skirt | Amount \$55 00 |
| Type Check To City Center Market | Date Feb 9 86 Purpose Groceries | Amount \$55 00 |
| Type Check To Combined Fund | Date Feb 14 86 Purpose Community welfare | Amount \$35 00 |
| Type Check To Gasstop One | Date Feb 14 86 Purpose Gasoline | Amount \$10 00 |

| | | |
|--|--|-----------------|
| Type Check To Superette | Date Feb 14 86 Purpose Groceries | Amount \$50 00 |
| Type Check To Credit Union | Date Feb 14 86 Purpose Trip expenses | Amount \$80 00 |
| Type Gasokard To Bill's Service Station | Date Feb 15 86 Purpose New tires | Amount \$130 00 |
| Type Gasokard To Hi-Way Services | Date Feb 17 86 Purpose Gas for vacation | Amount \$20 00 |
| Type Check To Marino SuperStation | Date Feb 19 86 Purpose Gasoline | Amount \$15 00 |
| Type Check To Hi-Way Services | Date Feb 22 86 Purpose Gas & oil - vacation | Amount \$18 00 |
| Type Check To Shepard Grove Church | Date Feb 23 86 Purpose Monthly Pledge | Amount \$40 00 |
| Type Check To C and F Mortgage Co Principal \$50 00 Interest \$475 00 Taxes \$75 00 Insurance \$14 00 | Date Feb 23 86 Purpose Payment Due Mar 1 86 | Amount \$614 00 |
| Type Check To Telephone Company | Date Feb 24 86 Purpose Basic local service | Amount \$20 00 |
| Type Check To The Electric Company | Date Feb 24 86 Purpose Electric Service | Amount \$25 00 |
| Type Check To The Gas Company | Date Feb 24 86 Purpose Gas service | Amount \$63 00 |
| Type Check To Bill's Service | Date Feb 24 86 Purpose Gasoline | Amount \$17 00 |
| Type Check To Everystate Insurance | Date Feb 24 86 Purpose Insurance for car | Amount \$50 00 |
| Type Check To IMS Credit Union Principal \$90 00 Interest \$20 00 | Date Feb 26 86 Purpose Auto Loan Payment | Amount \$110 00 |
| Type Check To Superette | Date Feb 26 86 Purpose Groceries | Amount \$65 00 |

| | | |
|---|--|----------------|
| Type Check To Sandford's | Date Feb 26 86 Purpose Richard - Sportcoat | Amount \$80 00 |
| Type Check To Credit Union | Date Feb 27 86 Purpose Misc | Amount \$30 00 |
| Type Check To City Services | Date Feb 27 86 Purpose Water/Sewer/Waste Collection | Amount \$22 00 |
| Type Account Debit To Savings Account 02 Fund | Date Feb 28 86 Purpose Emergency, Repair & Vacation | Amount \$71 00 |
| Type Account Debit To Account 04 | Date Feb 28 86 Purpose IRA - Jane | Amount \$30 00 |
| Type Account Debit To Account 03 | Date Feb 28 86 Purpose IRA - Richard | Amount \$30 00 |

APPENDIX D

PERSONAL FINANCIAL PLANNING SAMPLING FRAME

| PERSONAL FINANCIAL PLANNING SOFTWARE | SOURCE ONE | SOURCE TWO | SOURCE THREE | SOURCE FOUR | SOURCE FIVE | SOURCE SIX |
|--|------------|------------|--------------|-------------|-------------|------------|
| INSUFFICIENTLY REVIEWED PROGRAMS (Con t) | | | | | | |
| Microsoft Financial Statement Analysis | ----- | ----- | ----- | ----- | ----- | ----- |
| Money Manager | ----- | ----- | \$59 95 | ----- | ----- | ----- |
| Money Street | \$99 95 | ----- | ----- | ----- | ----- | ----- |
| MoneyWorks | ----- | \$125 00 | ----- | ----- | ----- | ----- |
| Mousebudget | ----- | ----- | ----- | \$69 95 | \$69 95 | ----- |
| Multi-Tool Budget | ----- | \$150 00 | ----- | ----- | ----- | ----- |
| Multi-Tool Financial Statement | ----- | \$100 00 | ----- | ----- | ----- | ----- |
| Peachtree Home Accounting System | \$99 00 | ----- | ----- | ----- | ----- | ----- |
| Personal Accounting Storage System | \$48 50 | ----- | ----- | ----- | ----- | ----- |
| Personal Banker | ----- | \$75 00 | ----- | ----- | ----- | ----- |
| Personal Finance Manager | \$49 95 | \$50 00 | ----- | ----- | ----- | ----- |
| Personal Financial Planner | ----- | ----- | ----- | ----- | ----- | ----- |
| Personal Money Matters | ----- | \$40 00 | ----- | ----- | ----- | ----- |
| PFP (Personal Financial Planner) | ----- | \$195 00 | ----- | ----- | ----- | ----- |
| Pro Bean Counter, The | ----- | \$45 00 | ----- | ----- | ----- | ----- |
| Super Checkbook III Plus | \$119 95 | ----- | ----- | ----- | ----- | ----- |
| Try-O-Plan | ----- | ----- | ----- | ----- | ----- | ----- |
| Your Money Matters' | \$99 95 | ----- | ----- | ----- | ----- | ----- |

PROGRAMS MEETING ALL CRITERIA

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|--|----------|----------|----------|---------|----------|----------|
| Dollars and Sense | \$100 00 | ----- | \$119 95 | ----- | \$119 95 | \$119 95 |
| Home Accountant Expanded | \$74 95 | \$75 00 | \$74 95 | \$69 95 | \$74 95 | \$74 95 |
| Managing Your Money (Andrew Tobias) | \$199 95 | \$200.00 | \$199 95 | ----- | \$199 95 | \$199 00 |
| Personal Accountant, The | \$49 95 | \$35 00 | \$49 95 | ----- | ----- | \$49 95 |
| Your Money Manager (J K Lasser s) | \$79 95 | ----- | \$89 95 | ----- | ----- | \$89 95 |
| Your Personal Financial Planner (Porter) | \$99 95 | ----- | \$99 95 | \$99 00 | \$99 95 | \$99 95 |
| Your Personal Net Worth | \$79 95 | \$100 00 | \$79 95 | \$79 95 | \$79 95 | \$79 95 |

Source One Bartimo (1985)

Source Two A+ Buyers Guide (1986)

Source Three SoftGuide (1985)

Source Four Malnig (1986)

Source Five The Apple II Review (1985)

Source Six Home Software Catalog (1985)

VITA

David Paul O'Brien

Candidate for the Degree of

Doctor of Philosophy

Thesis TOWARD DEVELOPMENT OF AN OBJECTIVE METHODOLOGY FOR EVALUATING
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