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CANADIAN THESES ON MICROFICHE

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FORMAL SCHOOLING
AND THE DEVELOPMENT
OF CONSUMER BEHAVIOUR

by

Colin J.Laine

A.S.B.I., School of Economics, London (U.K.) 1965

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Colin J.Laine

Simon Fraser University

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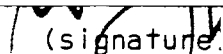
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FORMAL SCHOOLING AND THE DEVELOPMENT OF CONSUMER BEHAVIOUR

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ABSTRACT

This study examines the question whether students exposed to formal consumer-related education are more competent than those who receive no such instruction. Although educational policy in British Columbia reflects the belief that consumer education will enhance relevant competencies, most research fails to support this assertion.

This study compared the knowledge, attitudes and self-reported consumer activism of urban high school seniors who have taken consumer-related electives with students who have not. A random sample of 300 high school seniors was surveyed with an instrument constructed from several standardised economics tests and attitude scales. A 10% subsample was subsequently interviewed to ascertain the consistency of responses and to establish the limitations of the instrument. Two hundred twenty six usable responses were received. The Test of Understanding Economics (TUE) showed a reliability coefficient of .71 which compares favourably with standardised tests.

The major findings were (1) that there was no practical difference in the economic knowledge between students who have and have not had formal consumer-related instruction; (2) general prior academic achievement, a proxy for intellectual ability, was the only variable consistently contributing to variance in students' consumer-related skills; (3) elective courses contribute significantly only to the development of more flexible attitudes; (4) of the electives, only Home Economics made a statistically significant contribution to knowledge and attitudes; (5) there was no consistent pattern of variables involved in self-reported

consumer-related behaviour; and (6) the variables studied contributed only a minor amount(2% - 23%) to the variance in self-reported consumer-related behaviour.

The consumer economics courses presently being offered or developed rest on the belief that they will have positive effects on consumer-related behaviour. The results of this study show that the desired ends are not being met and call into question the mandating of consumer education courses as a matter of provincial policy.

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Colin J. Laine

Vancouver 1982

CONTENTS

Title	
Approval	ii
Abstract	iii
Acknowledgements	v
List of Contents	vi
List of Tables	viii
List of Figures	x
1. Introduction and Statement of the Problem	1
2. Review of Selected Literature	8
The Effects of Studying Courses in Economics	10
Why Consumer Courses Might Fail	12
The View of Consumer Psychology	14
Factors Affecting Economic Literacy	16
Demand For & Supply Of Literacy	18
Testing Instruments	20
Development of The Instrument	25
Summary	26
3. Methods	29
Sampling Procedure	29
Instrument Development	29
Administration of The Survey	32
Interview Check	33
Analysis of Data:	
The Use of Multiple Regression Technique	35

Structure of Regression Analysis	36
4. Results, Analysis & Discussion	40
Descriptive Data for Variables under Investigation	40
Discussion of the Importance of Practical Significance	42
Analysis of The Contribution of Formal Schooling	45
The Effect of Formal Schooling on Specific 'Kinds' of Knowledge.	56
Analyses Concerning Relationship Between Formal Schooling & Flexibility of Attitudes.	65
Analyses Concerning Relationship Between Formal Schooling & Consumer Activism	70
Summary	72
5. Discussion	73
Appendices:	
A. The Survey Instrument	84
B. Content/Behaviour Matrix	96
C. Mean Difficulty Statistics of T.U.E.	97
D. Subsample Interview Questions	98
E. Frequency Figures	100
List of References	106
Bibliography	110

List of Tables

	Page
1. Correlations of all variables	41
2. Regression Analysis of knowledge by students with & without formal training	47
3. Regression Analysis of knowledge by students with more or fewer Formal Training Courses	47
4. Regression Analysis knowledge by students with training in specific school departments	47
5. Breakdown of TUE by courses taken	49
6. Breakdown of GPA by courses taken	51
7. Effect size of knowledge of General Business 12 students with those without any courses	54
8. Effect size of knowledge of General Business 12 students with all other students	54
9. Effect size of GPA of General Business 12 students to those without any courses	55
10. Effect size of GPA of General Business 12 students with all others	55
11. Comparison of TUE with TUPE	56
12. Multiple regressions of recall/understanding, simple application & complex application of taking some courses over none	58
13. Multiple regression of recall/understanding of taking GB 12 vs none	60
14. Multiple regression of recall/understanding of taking GB 12 vs other electives	60
15. Regression of simple application of knowledge of taking GB 12 vs none	61
16. Regression of simple application of knowledge of taking GB 12 vs other electives	62

	Page
17. Regression of complex application of knowledge of taking GB 12 vs none	62
18. Regression of complex application of knowledge of taking GB 12 vs other electives	63
19. Follow-up interview Pearson Coefficients	65
20. Regression of attitudes 'some vs none' & 'more vs fewer'	68
21. Regression of attitudes 'GB 12 vs all other'	69
22. Regression of attitudes 'GB 12 vs none'	69
23. Regression of activism 'some vs none'	70
24. Regression of activism 'more vs fewer'	71

Figures

Page

1. Graphical presentation of Table 5 data
2. Graphical presentation of Table 5 data controlled for other predictors

50

50

CHAPTER 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction

There has been increasing interest in consumer economic education shown by educators in this province in the past decade. This has been matched by the persistence of many institutions such as the Joint Council for Economic Education and the Canadian Foundation for Economic Education that have recommended or demanded the inclusion of such studies in the regular school programme. Evidence of the pressure is seen in the growth of courses including economic and consumer-related topics developed at both local and provincial levels. For example, the new Social Studies curriculum is to be based on "economic foundations" (current Social Studies Curriculum Revision Committee draft recommendation); in addition more than thirty locally-developed courses concerning consumer economic education have been started in British Columbia within the past five years. It is generally held that by being taught such concepts, students will overcome the ignorance about economics believed to exist in the marketplace (Scitovsky, 1960). Thus "economic literacy" or competency has become widely accepted as one of the goals of the public schools' "Core Curriculum". These concerns prompt an assessment of such education in our schools to identify those factors having a significant influence on the economic competencies of our high-school graduates.

One could reasonably conclude from this activity that the leaders of our society have assigned a "survival-value" to economic competency. Thus, if we assume that to participate effectively in our economic system, young people need to understand basic economic principles, then those understand-

ings need to become an integral part of each child's educational development. Further, if we assume that formal schooling is a major source of our youth's development, then the practices and materials used in schools must be such that those students who are exposed to them will be more competent than those who are not. If the school is not effective by this criterion, then large sums of money are being spent on either ineffective materials, curriculum design or teacher training. In addition to being socially unsatisfying, economic institutions would regard this failing as unwise economic decision-making.

Background

In spite of the common belief that exposure to consumer-related materials in school will bring about appropriate consumer behaviour, research to date has been very inconsistent in proving whether or not this is so. This inconsistency admits the theoretical possibility that the school does not impart the knowledge and develop the skills students will need to maximise economic satisfaction.

The inspiration for this study has been a combination of the ideas expressed by J.M. Stephens (1967) concerning the power of social learning, and a maxim quoted by George J. Stigler (1963), often referred to as "Stigler's Law". Stephens' notion of a social learning is the contention that certain "elementary forces" always accompany schooling (1967, p.5). These forces are a combination of faith in what Stephens calls "primitive spontaneous tendencies" that have developed as the race evolved and "school producing tendencies" (1967, p.6). They have developed because they have "survival value": either immediate or more remote (1967, p.25), and therefore have constancy and a high probability of occurrence. These

elementary forces have led, not only to the very existence but also to the furtherance of the work of schools (Stephens, p.58). They are:

1. Spontaneous manipulative tendencies which lead many people to stress matters that have little payoff and which other people treat indulgently;

and,

2. Spontaneous communicative tendencies
 - to talk of what we know;
 - to applaud or commend, to disapprove or correct others' performance;
 - to supply answers that elude others;
 - to point the moral of a teaching

"Stigler's Law" suggests that if one were to administer a test on current economic problems to students or even to persons five years out of school, they would perform in a similar fashion regardless of previous economics courses (1963, p.657).

Statement of the Problem

Together, these two views of education in economics suggest that the courses, materials used, and methods applied have minimal effect in the development of Stephens' "necessary tendencies". Survival-value behaviours are more likely to evolve as a consequence of everyday interactions occurring throughout life. Thus, one could hypothesize that it is the extra-curricular experiences which determine the degree of competency in economic-related behaviour and decision-making, which in turn determines the satisfaction one gains from involvement in the marketplace. Researchers have, on the whole, not found that formal schooling in consumer and economic-related education is efficacious in molding such behaviour (Boyer, 1978; Broudy, 1978; Jacoby, 1976; Moschis & Churchill, 1977; Saunders, 1971; Stanley, 1977). Further, no empirical assessment has been conducted in

British Columbia on formal consumer economic education, leaving in doubt whether findings from other settings are generalizable to this province.

This study, therefore, sought to assess empirically the effectiveness of formal consumer economic education and to suggest guidelines for developing related materials and programmes based on these findings. The specific objectives of this study are to: (1) determine the level of attitudes, consumer activism and consumer-related knowledge possessed by high school graduates living in a large urban area of British Columbia; (2) assess the effectiveness of consumer-related courses taught in (large) urban schools; and (3) examine the extent to which demographic and factors uncontrolled by schools such as age, sex and socio-economic status (SES), contribute to consumer-related knowledge, attitudes and consumer activism.

Data were collected through the use of a survey instrument made up from several sources. The core of the instrument was a Test of Understanding Economics (TUE): a knowledge hybrid made from a set of standardised economics tests. This survey was administered to high-school seniors in a large urban area, offering a comprehensive range of demographic and non-school variables outlined above.

Limitations of the Study

Many studies have limitations in their reliability, validity, and generalisability. This study has four significant limitations.

The first limitation is the nature of the test instrument. It is an author-produced hybrid of several standardised tests of economics knowledge. Its reliability may therefore be open to question. The Kuder-Richardson-20 formula test of reliability was applied to the test's results. The KR-20 formula was the one applied to the standardised tests so the use of it here

would afford some comparison between the hybrid and its sources.

The second limitation is the content validity of the test. The test items are intended to tap general knowledge and are not aligned to any particular course. Thus, they may not be sensitive to the effects of instruction. Owing to the fact that many courses have a wide interpretation by teachers, however, it is possible that some students may have had course content exposure that relates to the test content.

The third limitation is the nature of the sample. The survey was administered finally to high school seniors in only one school. This limits the generalisability of the findings. The participating school, however, offers a complete range of electives. This increases the possibility of a varied exposure to economic ideas by the students. Further, the students come from a comprehensive range of socio-economic backgrounds and of general intellectual ability. Thus it would be possible to generalise the findings to a similar urban area.

The fourth limitation is the administration problems and the effects of these on the return rate of the survey. Although the target was a random sample of approximately four hundred subjects, a much smaller sample emerged whose data could be analysed. The reduction was due to the fact that the survey was not administered by the writer directly. Some of the teachers did not participate, and others interpreted questions from students and made suggestions which may have confounded the data. There was also an absence rate of 6% that day which reduced the sample size. Finally, some seniors were second language students for whom the reading level of the survey was too high.

Organization of the Thesis

The thesis is divided into four chapters: each is devoted to one stage in the development of the study.

An analysis and discussion of the theories, studies, and the development of tests is made in chapter two. The chapter combines work not only in the field of consumer and economic education but also in consumer psychology (especially the work of Jacoby), marketing research, the development of cognitive skills and their use in the economic decision-making process, and the significance of demographic factors and of social learning in school learning. The major survey that parallels this study is that of Moschis and Churchill (1978). There is, however, no evidence at present to show that their findings are applicable to students here in British Columbia.

Chapter three details the methods used to collect the data. The nature of the sample and the sampling procedure is shown along with some of the problems encountered. The development of the survey instrument is detailed along with the rationale for the use of a follow-up interview check of a subsample of the seniors.

Chapter four details the results and the analysis of the data. The statistical tables are shown and the rationale for the use of multiple regression is made. The concept of 'practical significance' by the use of Effect Size meta-analysis is introduced, described and applied to the data. This facilitates understanding of the practical contributions that specific courses and other educational factors make to knowledge of economics and to consumer-related skills. Whilst decisions regarding limits have been made on an "a priori" basis, the results do provide a basis for future research not only in the field of economic education but also in

any curriculum research.

The fifth chapter acts as a forum for discussion of the results. No survey can provide the reader with defensible, absolute conclusions regarding high school elective courses and their ability to provide students with the facility to transfer what they have learned in the classroom to the non-school world. It is hoped that the findings will provide some basis for further work into the efficacy of any school course to have a practically significant ability to facilitate positive transfer.

CHAPTER 2

REVIEW OF LITERATURE

Proponents of consumer economic education assume that the better informed or more knowledgeable a citizen is about the economic workings of our society, the more competent and satisfied that person will be as a consumer (Brickell & Scott, 1976; English, 1973; Katz, 1971; Stanley, 1977). However reasonable this may seem at first glance, much literature argues that mere possession of knowledge per se is not equivalent to ability to use that knowledge (Toole, 1971).

Demand for specific economic programmes and courses by educational authorities and advisory groups (e.g., B.C. Ministry of Education, B.C. Chamber of Commerce) seems to have arisen from the beliefs that the general populace is economically illiterate (Hansen, 1977), and that the desired competencies for consumers will flow automatically from the direct study of consumer economics (Brickell & Scott, 1976). The validity of this hypothesis is doubtful (Boyer, 1978; Broudy, 1978; Jacoby, 1976; Moschis & Churchill, 1976; Saunders, 1971; Stanley, 1977).

One major problem with investigating the relation between economic or consumer literacy and competence as a consumer is that there has been no operational definition of "economic literacy" in any of the proponents' studies, even though all use the term and state such literacy must be improved (Brickell & Scott, 1976; Katz, 1971). Thus there is no consistent, concrete basis for measuring a population's "economic literacy". Second, that some schooling may make a difference to gross factual knowledge does not mean that there is a one-to-one correspondence between a unit of instruction and a particular life outcome such as consumer activism or the

development of positive attitudes. Such a correspondence is likely only if the learner has a broad base of knowledge to work from and has had the opportunity to internalize and practice with feedback what has been learned (Gagné, 1970). If this has not occurred, such a correspondence would occur either stochastically or if the stimuli that, during instruction, were associated with specific responses were to reappear essentially intact in the future (Haslerud, 1973).

Schooling, and the elaborate and refined changes in instruction and curriculum which have occurred in the past decade, have been criticised on the grounds that they promise to deliver something beyond their capabilities (Stigler, 1963). Stephens (1967) has proposed that the essential features of effective and useful learning may reside not in a programme of instruction but in those elementary forces referred to previously (p.3). He believed that these forces promote learning that has a "survival value" by affording people the facility to cope with the vicissitudes of everyday living. Further, these needs for survival would promote a "substantial measure of education attainment" even in the absence of any deliberate decision or intent to teach at all (Stephens, 1967, p.58). Because these forces are so automatic and ingrained in our behaviour, they command very little attention. Thus such forces would provide the mechanisms upon which educational activities must depend (p.5). If the nature or goal of an educational activity has no relationship to these survival forces, Stephens believes it can be of little consequence to the learner. Therefore competencies needed for effective consumer activism and knowledge may well differ distinctly from those characteristics of an academically literate person.

The Effects of Courses in Economics

Given the lack of an operational definition of economic literacy and the assumed universality of Stephens' "tendencies", it is reasonable to set aside for the moment the question of a population's economic literacy - or lack of it - and concentrate on describing the relative knowledge and competencies of students who have and who have not been exposed to economics instruction, in whatever guise. Three studies found that students who had taken courses in economics were more knowledgeable on tests of economic understanding than those who had no such instruction (Brickell & Scott, 1976; Saunders, 1971; Stanley, 1977). However, the tests used by these researchers contained many questions related to economic theory, much of which is outside the active consumer's focus (Jacoby, 1976). Brickell noted that "it follows that students get higher scores when course content matches test content" (1976, p.17). A second finding was that high school students' knowledge about economic topics was proportional to a conservatism in their attitudes toward economic matters and policy. No evidence was advanced however to show that changing students' attitudes in itself improved the basic consumer competencies or satisfaction. The wording however lent a positive interpretation by proponents of such instruction (Brickell & Scott, 1976, p.24).

Stanley's (1977) work was geared to the development of a Test of Consumer Competencies based on behavioural objectives. These objectives were appropriate primarily to the content areas listed in the Illinois Guidelines for Consumer Education and were distributed among those course areas. It thus is not surprising that the results of the test showed the knowledge of those who had been exposed to the course and materials to have been

statistically significantly greater than that of those who had had no such instruction. However, Stanley did not show the level of significance in his results nor did he report a measure of the size of effect associated with having taken courses. Thus we do not know the degree of either statistical or practical significance there is in his results. His findings therefore are open to question. But note again the close connection between test content and course content. To reflect on a question posed before (p.10), what if the test sampled more completely the range of economic issues that consumers must face rather than a narrower theory content?

Stigler was emphatic that the questions on such tests should not be technical ("textbookish" - Stigler's term) in nature but should examine current economic problems (Stigler, 1963, p.657). This, he felt, would avoid the rote memorization of technical data and would give a better indicator of general economic competency. Using this qualifier, Saunders' research (1971) tended to refute the original version of Stigler's hypothesis. His results were statistically significant well beyond the .001 level - yet he stated that one

could argue that 3.7 points on a 33 item test is a "small" difference ... the difference might be due to variables other than the amount of economics as only 22% of total population responded (p:246)

..... Needless to say, no-one should bet his life on any of the findings discussed (p.248)

Thus, even those studies which have shown a statistically significant difference in scores between those who have been exposed to economics courses and those who have not, have not solidly refuted Stigler's hypothesis.

There have been few studies that set out directly to prove the "Law" (Bach-Saunders, 1965, 1966). Some studies tended to support Stigler's words though they made no mention of Stigler in their work (Moschis & Churchill, 1976; Worthington, 1977). Worthington's study of students at Brigham Young University found that

there is no statistically significant difference at the .05 level in the personal and consumer finance literacy of students who have and have not taken a course in personal and consumer finance (p.37)

There was no analysis of effect size made for practical significance. He concluded that his findings lent strong support to previous studies which showed current programmes do not prepare people to act effectively in the marketplace. The reasons for this are numerous and, as Stephens suggested, may not be integral to the programme of instruction itself.

Why Consumer Courses Might Fail

Higher level cognitive (HLC) skills and processes are needed for effective transfer of skills (Bloom, 1966; Ellis, 1965; Gagné, 1970). Everett (1977) found in his study of introductory texts and course content that most modes of transmitting information in economics courses at college level typify lower level cognitive (LLC) approach in which basic facts and concepts are applied, if at all, to narrow, well-defined problems. It seems, therefore, that economists and teachers must assume students will transfer learning acquired in the courses taught using LLC materials and methods (acquisition of knowledge, short-term memory storage, convergent production of facts) to HLC skills (evaluation of ideas, synthesis of knowledge, application to varied situations) by themselves.

Further, it must be assumed that this knowledge will in turn transfer to the affective domain and will be manifested in active behaviours that describe an attitude change (a necessary process, according to the findings of Brickell). Many theorists, however, have rejected automatic transfer of learning (Ellis, 1965; Gagné, 1970; Haslerud, 1972; Haslerud & Meyers, 1958). They have shown that there needs to be insight into the principles involved, relevant subject pretraining, or mediation of the process, to ensure positive transfer. Thus, the more insightful consumer would tend to be the more active one. Evidence of the effects of prior learning on insightful behaviour occur in the studies of the "learning set" (Harlow, 1949), "anchoring ideas" (Ausubel, 1975), and advanced organisers (Allen, 1970) which enable learners to solve new problems more correctly with less trial and error. Haslerud (1972) also argues that to develop alternatives in meeting new experiences, one should foster after-learning (divergent application) of the learned HLC skills.

Thus if mode and material satisfies only LLC abilities then there may be little effective transfer of course objectives to the marketplace.

Knowledge Transfer & Use

Field and laboratory evidence exists to show that the actual amount of factual information sought by an active consumer is typically small relative to the amount of information available (Jacoby, 1976; Venkatesan, 1973). The actual quantity of economics knowledge possessed may therefore be irrelevant compared to the need on the part of the consumer for evaluative skills and insight into the variety of situations in which the consumer-related skills will have to be used.

So, if course content and test content parallel one another, and if

the course has dwelt on LLC skills, it is reasonable to assume the final exam will test only LLC skills. If it does not, then one should expect the final scores to differ significantly from classroom marks if they have been based on LLC skills. As has been shown (Crowley & Wilton, 1974), students' primary concern in school is gaining a good final grade. Thus, it seems likely that the students will focus attention on the skills needed to pass the course. If Everett is right this will mean that students will concentrate on developing LLC skills and the tone of a school curriculum which follows an LLC pattern will encourage the feedback between students and teacher in the course toward a "school" environment rather than a marketplace orientation. If a teacher, in this setting, encourages the development of LLC skills for maximum transfer of course content to marketplace behaviour, there may well occur a mutual frustration of teacher and students from inappropriate behaviour (Barnard et al., 1976). The teacher will be frustrated in attempts to develop marketplace awareness and the students may be frustrated in their attempts to achieve high grades. Therefore the students may experience a lack of feedback in their performance as students or may misconstrue the reactions of the teacher (Stephens, 1967). They may resist the attempts to alter their "inappropriate" (LLC directed) behaviour (Barnard et al., 1976) due to incoherently expressed goals.

The View of Consumer Psychology

Studies in consumer psychology provide us with another frame of reference to the question of competent consumer behaviour. One of the "pre-acquisition processes" (Jacoby, 1976) of consumer decision-making is opinion leadership: the extent to which other people exert influence over the consumer in the choice-behaviour context. Several studies have shown

it to be a major force in the consumer decision-making process (Gross, 1969; Jacoby, 1974; King & Summers, 1970; Montgomery & Silk, 1971; Myers & Robertson, 1974). One feature of the choice-behaviour context which particularly applies here is the degree of overlap across different spheres of influence (the degree of commonality in features of several different opinion leaders.) It has been found that the greater the degree of overlap the greater the influence (Gross, 1969; Jacoby, 1974).

Applying this to the classroom environment, one can consider the impact of the students' perception of the role played by the professional in the room. Will the role be construed as one of "teacher" or "consumer"? If it is a widespread phenomenon that schooling is the transmission of curriculum from adult (teacher) to child (students) (Meeker, 1969), using predominately LLC materials and processes (Everett, 1977), then it would be more consonant for the students to perceive the adults' role as one of "teacher". The perception of the teacher as "consumer" in this context may well cause dissonance in the students if the content of the two roles remain unrelated. Venkatesan (1973) has shown the need for cognitive consistency of roles in influencing consumer activism. The rapid increase in research into the belief-expectancy models in consumer influencing gives strong support to the possible effects of consistency and influence. Thus, if the LLC mode predominates the course, the degree of influence exerted by the teacher on consumer behaviour may well be insignificant.

If there is incompatibility of the two roles and their respective influences, there may be significant inconsistencies in the goal perceptions between teacher and students. The feedback experienced by both parties may cause confusions in the expectancies of outcomes. Further, if the topics are studied in different courses and in different depart-

ments (in large high schools especially) the goals may become misconstrued and incoherent to the point that they will lack a unifying mission in the educating of consumers (Broudy, 1978). Because of this, as well as the possibility of poor instruction in some cases, it is understandable why students might turn to the more dominant word-of-mouth influence of friends (Jacoby, 1976). This interpersonal influence has been extensively documented to show that it has substantial impact on consumer activism and attitudes (Cohen & Golden, 1972; Newman & Staelin, 1973; Perry & Hamm, 1969; Reynolds & Darden, 1971; 1972; Sims, 1971; Weber & Hansen, 1972; Witt, 1969; Witt & Bruce, 1972). This active seeking process is, I believe, what Stephens (1967) meant by the "spontaneous communicative tendencies" (p.58) and it occurs in choice-behaviour contexts that consumers find themselves in daily. Thus, unless the factors which determine consumer choice are included, the study of a consumer economics course could be inconsequential.

Factors Affecting Economic Literacy

One factor many researchers have found to be of significance is socio-economic status (SES) of the student's home (Brickell & Scott, 1976; Moschis & Churchill, 1977, 1977; Worthington, 1977). Those students who came from a higher socio-economic background knew more about economics and were able to show more ability in consumer-related skills such as active information seeking and the application of policies to everyday situations. These authors concluded that the thrust of consumer-related education should be aimed toward the lower SES students.

In order to establish a relationship between SES and school achievement, one must first obtain a good measure of SES. The scale chosen for

this study to measure SES of the respondents was the Blishen Scale, (1958, 1967).

Many indices which measure SES are based on a variety of factors such as father's income, father's education, occupation, family residential location, etc. For a valid comparison among students to be made, it is important to establish that the indicators upon which the index is based really do provide good predictors of current SES. An accurate index of SES should reflect an individual's overall social and economic position in society (Reisse, 1961). In a technical note on the measurement of SES (Eason & Crawford, 1971), four scales were found to be reliable: Blishen (1958, 1967), Duncan (1961), Reiss (1961), and Warner (1949). Of these, the reviewers concluded that Blishen's Index was the most suitable for use in Ontario as it had been constructed using Canadian data. They found it to be a legitimate substitute for the variables of family income and father's education since the data correlated ($r = .96$) over a ten-year period and the results were generalizable across urban settings in Ontario (Eason & Crawford, 1971, p.12). Therefore, although it is the most complex of the four scales deemed to be valid, reliable, and generalizable, its use should produce the most accurate classification.

The Blishen Index is a scale of some 320 occupations. Blishen's approach used a simple function of the distribution of education and income among its incumbents. This approach resulted in ratings for nearly all census occupational titles (Blishen, 1967, 1968, p.42). His procedure consisted in constructing a regression equation using variables of income level and education level indices with dependent variable being Peneo-Porter scores which overlapped the 1961 census list (Blishen, 1967, p.42).

The equation was then applied to each of the 320 occupations obtained from the 1961 census and a socio-economic index score was produced for each. The occupations were then ranked on a basis of these values, distributed across provinces by percentile and rank-order divisions and a mean and standard deviation on the Index was produced for each province. Blishen believes that collapsing the 320 categories into seven decile groupings or into percentiles (e.g. Professors & College Principals = 76.01 - category 7) provides acceptable accuracy. As this study will use regression techniques for analysis, the use of the continuous scale is the best alternative because it will afford greater accuracy. Moschis & Churchill (1977) used a bi-serial breakdown of SES (high-low) and because of this had only two referents to work with. As they found SES to be important, I believe they missed out on valuable information that a continuum would have given them.

The Demand For and Supply of Literacy

Why should people spend time learning what is reported to be a difficult and often dull subject (Hansen, 1977)? In a Gallup Opinion Index conducted in the United States (#119, May, 1975) respondents were asked to rank nine graduation requirements for those students not planning to go to college. Eighty-five percent of those ranked Reading, Writing, and Arithmetic and a Saleable Skill as "Very Important"; seventy percent said U.S. Government and History, and forty percent rated Humanities & Other Nations as "Very Important". Where does consumer economic education fit in? Hansen (1977) suggested parental and community demand for such education is weak and may indicate a judgment that the external benefits

of such instruction are very limited (p.63). People seemed to be prepared to let "experts" work out the complexities of economic policy problems, so the students' effort put into "citizenship elements" of the curriculum (Hansen, 1977, p.64) was frustrated because they perceived little direct personal benefit from the study of macro-economics; there were better ways to spend their time in school.

If this is true, why the plethora of courses and materials? Boyer (1978) suggested that much of the pressure has been from private-interest groups "dedicated to their own self-interest". He postulated that this high-pressure selling may be for no other reason than to sell their own materials and pre-packaged programmes (p.18). Much of this material is often packaged for the wrong age, grade or SES group (Boyer, 1978; Moschis & Churchill, 1976) although one wonders what the "right" group is supposed to be. These self-interest groups tend to assume, on the basis of studies showing Americans have an incongruous lack of economic knowledge, that children come to school knowing very little or no economics (Hansen, 1977). Numerous studies have shown, however, that children come to school with a very full range, of economic experiences, attitudes and cognitive capacities albeit at an elementary level (Barnard, 1977; Fox, 1979). This incongruity only adds to the already existing confusion and can only cause greater misconstruing of goals referred to earlier.

The innovations to instruction tend to be in the materials, programming and instruction side of the problem (Stephens, 1967) or the "supply side" of the education process (Hansen, 1977). Review of the work in economic education to date shows the effort devoted to increasing the quantity and quality of (economics) teachers, improving materials and making the approaches more "relevant" (viz., appealing) seems to assume that once

the right "recipe" is found, people will be eager to acquire this economic literacy. There is little or no evidence to support this assumption.

Testing Instruments

There are several published tests from which to choose that have been used, some extensively, in the U.S.A. and which have substantial norming data. Rather than devise a new test, which might prove less reliable (J.C.E.E., 1978) it would be preferable to use one of the standardised tests or assemble a battery of items from a variety of these sources. As many questions are suited only for a knowledge of U.S. institutions, it would be necessary to disregard or adapt these to the Canadian situation. The potential sources are described in the following.

1. Test of Understanding in College Economics. (TUCE)

This test is one of the longest standing tests presently in use and has the most extensive documentation. Originally developed by a nine-member committee of prominent economics educators and researchers under the direction of Dr. Rendigs Fels, it was to assess the degree of understanding of students in a typical introductory college economics course (Saunders & Welsh, 1975). Each of the four forms contain 33 items which cover specified content areas and three equally emphasized "skill" areas: recognition and understanding (RU), which fell into Bloom's LLC categories of knowledge and comprehension, simple application (SA) and complex application (CA). SA and CA type questions covered the range of Bloom's HLC categories (Psychological Corporation, 1968). To test the "lasting effects ..." (Saunders & Welsh, 1975) a hybrid was made using all four forms but omitting those questions that required or relied on detailed

technical analysis. Even after this was done, however, there was, in the opinion of the reviewers of the hybrid TUCE, (Lewis & Dahl, 1971; Phillips, 1972; Saunders & Welsh, 1975), a very high correspondence between course content and test content. Thus, the knowledge needed would have to be specific to having taken a college course.

The TUCE hybrid showed a high Kuder-Richardson reliability coefficient ($r = .78$). Further, it was found that the more college economic courses taken, the more reliable the test result became (Saunders & Welsh, 1975) which suggests a high correlation between test items and course content. The items that were most reliable over time were the SA items. RU and CA items showed a substantially lower reliability than SA. Lewis & Dahl (1971) noted:

Our results indicate that the researcher using TUCE must be cautious about imputing higher educational value to complex (CA) application types of questions. (p.155)

Although the A.E.A. Test Committee judged the test had content validity, research has found the test to give "large residual measurement of ... Other knowledge ..." (Lewis & Dahl, 1971, p.158). It does discriminate however, between "good" and "poor" economics students at the college level but researchers have cautioned that the test not be used unless it closely reflects course content and the requirements of the project meet the specifications of the test (Saunders & Welsh, 1975). For the purposes of this study there are many precautions one would have to observe, therefore, in using this instrument.

2. Test of Economic Understanding (TEU) - SRA

This commercially produced test is more general than the TUCE and was not originally designed to correlate highly with the content of college

courses.

It has been nationally normed in the United States and has been found to be most appropriate for assessing the effectiveness of a one-semester college level "survey" course (Phillips, 1972). It was constructed via reference to the Task Force Report (1961), the Thompson-Walthall-Merson report (1967) and a participating group of community college economists (Center for Economic Education, Cal. State College).

The researchers (Phillips, 1972; Saunders, 1970) found it was easy to administer, accepted by the participating economists, that is correlated highly with the TUCE "Recognition & Understanding" (LLC) skills, and that it counted for little in determining college grades (Saunders, 1970, p.40). Its reliability was found to be 0.80 (KR 20). However, due to its college orientation as well as LLC focus, it will not make a suitable instrument for this study because the students who will be surveyed have not yet been exposed to college level courses and it is not wished to concentrate on LLC skills.

3. Adult Performance Level (APL) Test ("Consumer Economics").

This test covers several areas of which Consumer Economics is one. It was developed by the American College Testing Program to assess the performance or functional competency of mature adults. It focuses on basic tasks the ACTP claim are highly related to everyday living and concentrates on the competency of disadvantaged adults in "... necessary life skills ..." (Manual, p.2). The authors stated that the test had content validity within the conceptual framework of Adult Basic Education programmes. Again, there is a close relationship between test content and programme content.

The reliability for the 25 Consumer Education items was 0.89 (KR 20)

with a mean difficulty of 67%. The reliability of the other subscales ranged from 0.85 to 0.90 (ACTP Manual, 1978). These KR 20 figures are much higher than either the TUCE or TEU.

It appears that even though high in reliability, this test would be generally unsuited to this study due to its programme and population orientation, however it did encourage me to consider the significance of a test's readability. As the adults being tested had limited reading experience, the designers found it necessary to pay considerable attention to the language level of the questions. Minor changes in language level led to changes in scores. The average readability of the Consumer Economics items was grade 5 (Fry Readability Level). If one wishes to measure proficiency in necessary skills, therefore, readability is particularly relevant.

4. The Moschis & Churchill Survey.

This test is a survey concerned with attitude and consumer knowledge and activism rather than economics per se. Data about the instrument are available only from one survey completed by the authors (Moschis & Churchill, 1977).

Content validity was not formally addressed by the researchers. However, they stated that specific skills represented in their instrument "..... were fairly representative of those emphasised in various school consumer-related courses" (p.3). Beyond this, there is no evidence supplied for validity. As for reliability, coefficient alphas were:

Part 1 Knowledge of Consumer Affairs (Economic Concepts and Consumer Legislation) = 0.57

Part 2 Consumer Finance Management = 0.61

Part 3 Economic Motivations for Consumption = 0.69

Part 4 Information Seeking = 0.37

Part 5 Consumer Activism = 0.64

The researchers concentrated on correlations among items, and did not determine an overall test reliability important. These figures are significantly lower than any other test reviewed here. Due to the nature of their instrument, Moschis & Churchill have left many doubts about their survey and so its use would be generally inadvisable. Most especially is noted the survey content's high relationship to formal education programmes in Wisconsin. The format of the survey such as the strong relationship found among knowledge, attitude and activism gave me some insights into the need to include affective items in an otherwise cognitive test.

5. Test of Understanding in Personal Economics. (TUPE)

This test was developed based on the U.S. Joint Council of Economic Education series of guides for teaching personal economics through high school curriculum in business education, home economics, and social studies. It was hoped that it would measure the effectiveness of the teaching advocated in the guides. Normative and standardisation data were collected in 1970 for purposes of making test scores "as meaningful as possible ..." (JCEE, 1971). The total sample was 803, 430 being grade 12 students. The test content, being developed as a adjunct to the teaching guides, closely paralleled the course content.

The reliability using KR 20 formula was 0.84, (12th grade: $r = 0.86$); the KR 20 figure is high and the manual stated that TUPE is generally higher in reliability than most teacher-made tests (p.19). Thus its utility for the current study is a question of appropriateness, not reliability. On the fifty question test, the mean for the norming sample

was 23.9 (47.8%) with S.D. 8.6. Because of its high reliability, I feel the scores provide this study with an acceptable gauge to measure my final instrument against.

Thus far, this instrument has the most appropriate items for inclusion in this study once items unique to the U.S. system are discarded or altered, as it was designed for use at the pre-college level.

There are two other major instruments in circulations. However, at the time of writing it has not been possible to assess their suitability as no research or review studies about these are available presently. The other major instruments are:

1. Test of Economic Literacy (Dr. J.C. Soper) 1979
2. Test of Economic Achievement (U. of Toronto) 1979

Development of the Instrument

Considering all the above facts, findings and implications from previous surveys and tests it seems important to have some alignment between course content and test content. As there are so many locally developed courses in British Columbia's schools, it seems most plausible to form a content/behaviour matrix using Economics 11 as the basis as all other courses have part content in common with this course. All questions peculiar to the U.S. system should be discarded or modified from any instrument and the following criteria applied to the balance of test items:

1. it will measure a student's general comprehension of economics;
2. it is easily read by a student so that its reflection of knowledge and skills will not be a function of language ability;
3. it can be administered efficiently and with minimal disruption on the classes concerned;

4. it is reliable.

It seems that the primary source would be the TUPE since (1) it has been the most extensively used and validated test for the age group this study intends to address itself to; (2) its degree of difficulty (from a reviewed comparison of the manual data, Saunders & Welsh, 1975 is the average of the tests studied; (3) it has a readability level that is the median of the tests studied (level II - FRY readability test); (4) TUCE, TEU, and TEL test knowledge most often found in college courses; (5) APL is designed for basic skill learning in disadvantaged adults; and (6) the Moschis & Churchill instrument is an attitude survey studied only once, in one state, and has statistical data that is questionable for generalisability.

As there are several items in TUPE that are U.S. oriented, it was necessary to replace these with items from other sources such that the final instrument would be generalisable, would have a balance of RU, SA, & CA items to test LLC and HLC thinking skills, and would cover the major economic themes of school curricula.

Summary

The research completed so far in this field is inconclusive. Perhaps this reflects the extreme diversity of the methods and goals of consumer economic education. It has been shown that children come to school armed with a vast array of economic experiences, attitudes, and cognitions that are less vulnerable to modification by formal schooling than the contents included in formal consumer-related courses are by extra-curricular experiences. Thus there will be little difference in the knowledge about consumer economics and behavioural articulation between students who have

and who have not been exposed to such formal instruction. The forces favouring survival (Stephens, 1967) will be the ones that dominate. Until students perceive formal schooling or any course as having such a survival-value, the social learning and influences occurring outside the classroom will override the instruction that occurs inside it (Stephens, 1967).

What has to be done is to determine whether the findings of studies done elsewhere (e.g., Brickell & Scott, Moschis & Churchill, Saunders) are applicable to this region. To assess the effects of formal instruction on consumer-related knowledge, it seems imperative to maintain certain uniform denominators. "Ability", "SES" and "exposure" have been common denominators in studies completed to date, thus some uniform measure of ability and possibility of exposure to formal consumer-related education needs to be obtained.

This survey will therefore use Grade Point Average (GPA) as an arbitrary "ability" denominator and it will be administered only to high school seniors. These students would have the greatest likelihood of exposure to elective courses and would also still be affected by high school course material and experiences.

In order to gain the opportunity to view the greatest variation in students, it is necessary to choose schools which offer a comprehensive list of electives and which have a full representation of ability range and socio-economic levels in their student population.

If it is found that the courses do make a difference we need to find out what it is that causes the difference (e.g., what "survival-value" is present). If they are not associated with a significant difference, educational planners will need to investigate the premises and arguments for including consumer-related courses in school curriculum. Until the con-

troversy is settled, time, energy, and money may be misspent meaning goals that schools may be unable to achieve.

In such an important field as economic education, excessive haste and fascination with quantity at the expense of quality are particularly inadmissable. (Valeev, 1973)

Research has shown that in the field of economic education, haste and quantity in the production and inculcation of consumer-related courses and materials may have marred the search for reasonable and achievable goals (Brickell & Scott, 1976; Moschis & Churchill, 1977; Saunders, 1970; Thompson-Walthall-Merson, 1967).

CHAPTER 3

METHODS

The basic plan of the study is to compare, on a cross-sectional basis, the performance of students who have been exposed to one or more formal courses containing consumer-related concepts with the performance of similar students who have not taken such a course.

Sampling Procedure

Two schools within the Greater Vancouver area which fit the denominator criteria are New Westminster Secondary School and Centennial in Coquitlam. The original target was for a random sample of approximately four hundred grade twelve students - or about twenty five per cent of the senior population of the schools.

Instrument Development

Stigler maintains that the test form should not be based on 'Textbook questions'; when commenting on the appropriateness of any test, however, he said:

..... questions would most likely be too text-bookish to be a completely honest test of the efficacy of the (elementary) economics course. However, I see no harm in a biased examination because I predict that even the maximum estimate of the surviving economic knowledge will be very small. (Stigler, 1963; p.659)

He claims the development of an unbiased test (given the great variety of courses available) to be unlikely. In this study therefore, it was assumed that any question(s) which bias toward any particular course or set of courses, would not affect the results to any significant degree. However, questions

7

judged to be highly theoretical or technical would be excluded to minimize bias.

An initial version was made from the Test of Understanding Personal Economics (TUPE) along with questions from the A.P.L. - 'Consumer Economics' Test and from Moschis & Churchill's instrument; this hybrid prototype was administered to twenty volunteer students in grade eleven. After scoring, the papers were divided into two groups at the median score. Discrimination indices for each item were calculated by dividing the questions, as measured by the difference in the number of students correctly responding to the item between the two groups by the sample size. The difference scores were turned into percentages to form a scale of discriminability which ranged from 2% to 76% for the seventy questions listed. This pilot test took from between 35 and 62 minutes to complete, with a mean time of fifty minutes.

With these initial data, it was estimated that a test using the fifty most discriminating items would take approximately thirty minutes to complete, thus being convenient for classes in the schools and non-fatiguing for students. To achieve this length, the twenty least discriminating questions were discarded; these were those with less than 12% discriminability. A multiple choice format was adopted and the instrument administered to a second group of twelve grade eleven/twelve students, with the following results: the mean was 31.5 (Maximum = 50), the standard deviation was 3.5, and the time taken was 27 - 39 minutes with a mean time of 32 minutes. A difficulty index was calculated for each of the fifty questions based on the percentage of correct answers (Appendix C). The mean difficulty was 51.04%

The next stage was the development of a content/behaviour matrix to gauge content validity. The Economics 11 course was chosen as the basis for

defining content as it is the only economics course per se offered in British Columbia schools. The content guide was formed from the economic concepts found in this course. There are seven major units outlined in the Appendix (B). Some of these units would appear in some other courses (e.g. Cons. Fundamentals 10, Consumer Math, Foods) but there is no complete duplication elsewhere in the curriculum, however, General Business 12 is a close parallel. This provided a concrete base from which to measure relative knowledge acquired in learning economics. For the behavioural elements, I found several measures from which we could work but the categories evolved by Helmstadter (1974, Ch 4) reinforce the TUCE categories (RU, SA, & CA) thus the TUCE would form a useful descriptive matrix. These three behavioural categories were matched against the seven economics categories (Scarcity & Choice, Markets, Production, Consumption, Money/Banking, Income, Economic Policy) to form the matrix. The questions were then charted into the matrix to check the proportion of the test that would cover the content and behavioural criteria (Appendix B). Each question was identified for concept inclusion and then placed into a behavioural category using Bloom's taxonomy as the identifier.

To get information on the students' background, a set of questions was constructed that would provide information concerning age, sex, the number of electives taken, the mode of course transmission (e.g. lecture, discovery, mastery) SES, and whether the student felt he/she knew much about economics. This last aspect may well have some relevance as one's comprehension about how much one knows has been shown to affect test scores (Smith, 1975). In order to measure students' attitudes about consumer economics, the fifteen

items from Moschis & Churchill's study were added. Finally, a check of about 10% of respondents was made to see if some students might be affected by the possibility of the questions being 'text bookish'. This small interview questionnaire comprised questions to gauge the students' reaction to the survey, to check on attitudes that were examined on the survey and to provide economics questions based upon economics texts in current use in British Columbia Schools. The object of this check was to have a comparative measure of the efficacy of the original questions. By having text-related economics questions (one from each content area), we can see whether or not Stigler's assumption about the nature of the questions is reasonable.

The Administration of the Survey

The planned sample was to be a 1:3 random sample of high school seniors (about 400 students) from two secondary schools. These schools not only offered a comprehensive list of electives but also had a population representative of a full SES range. The final sample, however, was only about half of what had been planned. One school decided not to participate (the sampling in the other school was raised to 1:2 to compensate) leaving a sample size of 256. The questionnaires were administered to 12th grade home-room classes during regular morning session and took approximately 30-45 minutes to complete. The classes were chosen on a random basis in order to gain the greatest benefit from an unbiased control group (those without any exposure to an economics-related elective). Further, to have used a selective sample would have provided a disproportionate number of females and would have reduced the predictive value of this study. Due to absences from classes on the days the survey was taken, only 235 were returned. Of these, nine had to

be discarded as 'spoiled'; four did not respond to the TUE test, one was an ESL student whose command of the English language was inadequate to complete the survey and four were discarded due to patterns that indicated non-cooperation (e.g., "Father's Occupation 'Mother'; Mother's Occupation 'Father'"; TUE responses - "1,2,3,4,3,2,1,2,3, ..."). This much smaller sample size was further reduced in the regression analysis as many of the 226 did not complete all items. Thus regression analysis was made on a maximum size of 121. This is just over 25% of what had been hoped for.

The Interview Check

This interview was held with 27 students. The students were chosen from the alphabetically arranged pile on a basis of every 10th paper in the pile. There were sixteen males in this check and eleven females and was well-balanced with respect to GPA and SES. The interview took about fifteen minutes and was given individually. The idea of this interview was to have some comparison about knowledge, attitudes and activism to make with the larger survey. The Test of Understanding Economics (TUE) is a hybrid of many tested instruments that have been combined and adapted for this purpose. However, there are no norms or standards to compare this hybrid to, other than those established from ~~the~~ trial group of twelve. As the scores on the survey would be used to measure the knowledge of one student relative to others it seemed important to consider the fact that the items on the test may be technical. In case there were such questions, even though Stigler considers it inconsequential, I wanted to get a relative measure of scores when the questions were drawn directly from economic theory. If the results of this check differed significantly from those on the original test, this

would assess the original results on a basis of being free from 'text-bookish' contamination. If the questions showed a similar score and if the original survey showed a significant difference between those who had and those who had not taken economics courses, then those scores may well be affected by technical language. It is important that such a distinction be made. Also, the Economics 11 course is outdated inasmuch as it has not been revised in the past fifteen years and many teachers have adapted it to their own interests and strengths. So the course that is being taught may bear little resemblance to the curriculum guide. This could affect my original content behaviour matrix.

In order to give weight to Stephens' ideas about the social learning of students, it is important to measure the knowledge that students may have gained from home (family-owned business, family activities, etc.). Further, students may also believe they know very little about economics due to the fact they have taken no such course; yet they may be unaware that knowledge they possess is actually economic knowledge. As previous instruments (e.g., TUCE & CTA) have been criticised on the grounds they test much common (residual) knowledge, it was important to gauge the extent of technical and residual knowledge that is tested in the major instrument.

As the test (TUE) is in multiple-choice form, it may lack accuracy due to pure guessing (1 in 4 chance) by subjects that could be labelled erroneously as knowledge. To assess this possibility, the direct interview of a subsample of subjects is advisable. The interview instrument itself (Appendix D) contains three sections: personal reactions to survey and family activity; technical economics questions (True/False/Don't Know response) and

consumer activism. The data gained from the interview were correlated with parallel items in the original survey, especially to item #3 (students perception of knowledge) with interview section A, item #4 (courses studied) with score of technical knowledge (section B) and items 7 & 8 (attitudes) with consumer activity (section C). By using the course area data from the survey instrument, there should have been evidence to show which area of curriculum is more effective in teaching consumer-related knowledge and skills in transfer from a classroom/text context to a marketplace situation.

ANALYSIS OF DATA

The Use of Multiple-regression Technique

The inability to partition the variation explained by the descriptive model is a problem in many previous studies done in this topic. No previous investigation has partitioned the dependent variables into components that are uniquely attributable to each independent variable. This leads not only to the inability to infer causation but also puts severe limitations on predicting learning outcomes. Although all analytic techniques have limitations, the regression model has been found well suited for determining knowledge of intercorrelations, and for the construction and validation of predictive models (Guilford, 1956; Horton, 1978; Kerlinger, 1979). These researchers have found multiple regression to be an efficient and satisfactory model for determining how much each of the predictor variables contributes to the joint prediction of the criterion variables. This is more preferable to a mere indexing relationship between variables.

As the purpose of this study is to examine the relationships and effect

size of particular factors on consumer behaviour, attitude and knowledge, it was felt that multiple regression analysis would deal more adequately with the questions than a series of univariate analyses would allow.

Structure of the Regression Analysis

Of the many different ways of structuring the analysis, the one chosen for this study was a setwise hierarchical analysis with free stepwise entry of predictors within sets. It has been assumed that the variables have differing influence when considered within a 'formal schooling' frame of reference. The major question to be asked was how much variance in knowledge (TUE), attitude and consumer activism did the set, and the variables in each set, account for over and above the preceding ones?

The variables were considered as elements of sets of differing domains.

The four sets were:

1. Demographic variables - age, SES, sex.
2. General intellectual ability - GPA
3. Beliefs about sources of consumer economic knowledge
 - from everyday experiences
 - from school-based experiences
4. Number of consumer economic-related electives taken and instructional style in these electives.

The rationale for assigning priorities to the sets as a hierarchy was partly in prior social science research and partly in logical favouring the most parsimonious 'explanation' of the variability in a dependent variable.

Demographic variables comprised the first set in the hierarchy as their elements were the most pervasive of the variables under study, and they existed regardless of the number of electives and of direct influence of formal schooling. In previous studies these variables have been addressed as

being relatively unchanging and independent of other variables. Because of their assumed independent nature relative to schooling, demographic variables were expected to account for a minimal percentage of variance as an indicator of practical (educational) significance.

It is debatable whether general intellectual ability is affected by formal schooling. The grades children receive in school may well be a consequence of non-instructional factors as well as, or rather than, formal schooling received. Thus the variable (GPA), as a proxy for the interaction of general ability and the effects of all of schooling effects, allocated second priority for entry into the prediction model.

One bridge between schooling and behaviour lies in what one believes one knows from personal experience. This important aspect of transfer of learning has not been addressed in past studies on the subject of economic education. I feel it provides an important link between non-school and school-based variables. The life experience and school experience variables were given third priority for entry in the regression because they were presumed to reflect all the attitudinal effects of schooling and outside experiences.

The final set comprised those variables that can be manipulated directly by the school. Entry to, and the number of, electives and indirectly the teacher (instructional style), are the elements within the school's domain. This set would therefore reflect the contribution made specifically by formal schooling. By leaving this set to last, all other more general effects would have been statistically considered, thus allowing one to address directly the topic of this study. Further it would allow a more exacting indicator of practical educational significance and measure of effect through analysis of

'effect size'.

Within each set, predictors were permitted to enter the regression model only if they accounted for a statistically reliable portion of variance in the students' knowledge of economics. Thus, for example, the analysis might enter age at the first step and sex at the second step. This illustrates the step-wise aspect of the procedure. At the second step of the first set, this illustration indicates that students' knowledge scores are regressed jointly on age and sex. If SES, the third variable in the first set, does not share a statistically reliable unique portion of variance with students' knowledge (i.e., if the partial correlation between knowledge and SES is not statistically reliably greater than zero once age and sex are partialled from both knowledge and SES), then the second set of variables would be examined for entry into the regression model. This illustrates the hierarchical setwise aspect of the analysis. If GPA was uniquely associated with a statistically reliable portion of variance in students' knowledge, then this (single) variable from the second set in the hierarchy of sets would be entered into the analysis at step three. Knowledge scores are now regressed jointly on three predictors: age and sex from the first set, and GPA from the second set.

Because the analysis is based on statistical criteria, i.e. portions of variance uniquely shared between the dependent variable and a predictor, and on logical criteria concerning the "natural predominance or influence" of predictors on students' knowledge of economics, some seeming anomalies can arise. For example, if none of the predictors from the first set share a statistically reliable portion of variance with students' knowledge at step one, but GPA is highly correlated with knowledge, this predictor from the

second set will enter the analysis at step one. Now, in searching for the predictor that shares the next largest unique portion of variance with students' knowledge, the analysis still uses the hierarchy of sets to guide its selection. Thus, if a predictor from set three and a predictor from set one both surpass the criterion of statistical reliability, the predictor from set one will be entered at step two even if the predictor from set three is associated with more unique variance in knowledge scores than the predictor from set one. This procedure preserves the predefined logical hierarchy of sets as much as possible within preset statistical limits.

CHAPTER 4

RESULTS

This chapter presents analyses of data to determine the relationships among two sets of variables: (a) scores achieved on a test of consumer-economic knowledge (TUE), an attitude scale and a self-report scale of consumer activism; and (b) the degree of formal consumer-economic related education received and non-school (demographic) variables. The eight variables comprising set (b) are: the number of consumer and economics-related courses studied and age, sex, social-economic status as categorized by the Blishen scale, grade point average (GPA, a proxy for general intellectual ability), the amount of consumer-economic knowledge the students believe they have gained from everyday experiences, the amount of economic knowledge students believe they have gained from school-based experiences, and the perceived instructional style in prior consumer and economics-related courses (lecture/non-lecture). The various dimensions of the problem are stated formally as questions and data are presented with respect to each one.

Descriptive Data for Variables Under Investigation

Table 1 shows the means, standard deviations and Pearson correlations for all variables.

Twenty-three of the fifty-five correlations were found to be statistically reliable at or below the 0.05 level, with three of the variables showing many reliably non-zero correlations (TUE, GPA, Electives).¹

Two questions must be addressed in interpreting these statistics.

¹ Footnote: The terms "statistical reliability" and "statistical significance" are used synonymously in this chapter.

TABLE 1

Means, Standard Deviation and Pearson Correlations of All Variables

Variable	\bar{X}	sd	1	2	3	4	5	6	7	8	9	10	11
1. TUE (X)	47.280	11.125	(.71)	.21***	.24***	.09	.11*	.14*	0.39***	.17*	-.07	-.15**	-.04
N = 121													
2. ATTITUDE				(.49)									
0 = Inflexible	6.070	1.090			.09	.02	.05	.08	.12*	-.08	-.09	-.18**	-.04
9 = Flexible													
3. ACTIVISH					(.59)								
0 = Dependent	4.010	0.580		.10		.10	-.12*	-.05	.26***	.18**	.06	-.03	.08
5 = Independent													
4. AGE (years)	17.182	1.684					.08	-.16**	-.19**	.13*	-.03	-.01	.05
5. SEX													
1 = Male	0.430	0.497						-.05	-.02	.07	-.06	-.42***	.09
0 = Female													
6. SES (Blisshen Scale)													
Mother & Father	64.762	31.040						.10	-.04	-.04	-.05	-.16**	.05
7. GPA													
1 = Pass	2.110	0.800							.05	.05	-.14*	-.22***	.19**
4 = 'A'													
8. LIFE EXPERIENCES													
1 = No economics	2.703	0.803									.22***	-.05	.01
5 = Lot of economics													
9. SCHOOL EXPERIENCES													
1 = No value	2.405	0.666										.17**	.05
5 = Much value													
10. ELECTIVES													
(Max. = 8)	2.595	2.052											-.23***
11. INSTRUCTIONAL STYLE													
1 = All lecture	2.711	1.052											
6 = No lecture													

* $P \leq 0.05$ ** $P \leq 0.01$ *** $P \leq 0.001$

Note - Numbers in parentheses indicate the test reliability using KR-20 formula

First, although there were many statistically reliable non-zero correlations, there is no indication from this analysis of relations that may exist among sets of the variables. For example, although GPA is negatively correlated with Electives, there could be other variables that are intertwined in this relationship. This problem of multiple association, called multicollinearity, is common in social science research.

The second problem is that the correlations, whilst being statistically reliable are, however, tied to the size of the sample. As Kerlinger (1979, p. 318) pointed out

...with a large number of subjects, say more than 200, most tests of significance show statistical significance even when a difference...(is) perhaps trivial, or a correlation coefficient is very small and trivial...

It must be noted that 'statistical significance' says little about the magnitude of a difference or a relation. Further, statistical reliability is not equivalent to practical significance. Thus in order to determine whether any variable made specific contribution to another, more exacting analyses had to be made with respect to both statistical significance and practical significance.

Discussion of the Importance of Practical Significance

That a characteristic (e.g., a difference or correlation) has a statistically reliable non-zero value may be important to theoretical research yet be inconsequential in its application. The purpose of most educational research lies in the ways that findings can be applied to existing educational practice. As this is a large-sample survey, variances whilst being statistically reliable may be regarded as trivial (Kerlinger, 1979) by some

educators and so are not worth acting upon. Therefore

...before what has been found can be used, (to)...
persuade skeptics, influence policy, affect practice,
it must be known. Someone must...extract the
(practical) message. (Glass, 1976; p.4)

To reinforce Kerlinger's point, Glass felt there is little to recommend the statistically significant vs. non-statistically significant voting method in large-sample studies. In a voting method, the number of statistically reliable effects are counted and the larger the sum, the more important a variable or effect is claimed to be. This method is not designed to deal with the task of answering the more important questions of how large an effect a particular treatment produces or which method is the most effective (Cohen, 1977). The Effect Size (E.S.) thus was calculated to compare knowledge acquired by students having different amounts of exposure to economics via courses taken in the area.

The calculation of effect sizes required dividing the mean difference of the outcomes between 'exposed' (treatment) group and the 'non-exposed' (control) group by the within-control-group standard deviation; viz;
$$E.S. = (\bar{X}_t - \bar{X}_c) / sd_c$$

The result would be a fraction of standard deviation which, when expressed as a percentile, would provide a measure of (practical) effect. It is more appropriate to use percentile ranks as an interpretive scale as this relates to the positioning of one score relative to all other scores on a test. For instance, if a score fell such that an equal number of scores fell below as above it, it would be the 50th percentile rank.

The reference point for judging that an effect was worth paying attention to was arbitrarily decided to be $E.S. = 0.33$. This was an a priori decision using I.Q. and achievement test scores as a referent. The I.Q. test ($\bar{X} = 100$;

sd = 15) as a basic ability indicator, would suggest that 5 I.Q. points would be enough to indicate to many practitioners a difference in students' ability. In the Stanford Diagnostic Reading Test, such a variation would indicate a reading ability difference of one full grade. Thus an effect of one third of a change in the standard deviation equivalent to ± 11 percentiles would be 'practically' significant. This criterion was regarded as being of practical significance in subsequent analyses. Some researchers may argue that when there is no statistically reliable difference at some reasonable (but nevertheless arbitrary) level, any subsequent search for practical significance would be both purposeless and in defiance of the canons of statistics. The purpose of this thesis, however, is to question the assumptions upon which consumer economics courses are promoted and to offer recommendations to guide teachers rather than to prove or develop any given educational or statistical theory. Practicing teachers are more concerned with the practical importance of their curricula and teaching strategies and would be guided more by practical application of results than statistical significance. Further, since the sample size is large and the measure (TUE score variance) is experimental and exploratory, all findings are included in the interests of exploration rather than definition.

Analyses have been based on following calculations:

1. Standard linear regression
2. Standard error of means (SEm) = $S_{\bar{X}} = \frac{S}{N}$
3. Effect Size (σ_x) E.S. = $\frac{\bar{X}_t - \bar{X}_c}{sd_c}$
4. 90% confidence bands:

$$E.S. \pm (t_p = .10, df = N - 1) (S_{\bar{X}})$$

Analysis of the Contribution of Formal Schooling

In the analyses of the data, the amount of formal schooling in economics was characterised and addressed in four separate ways.

1. The relationship between some or no formal training, (as represented by the number of courses taken) and knowledge, attitudes and consumer activism (criterion variables) was determined.

2. Assuming each elective contributed some 'unit' of knowledge, the relationship between each criterion and the number of courses taken ('more versus fewer') was analysed.

3. As previous research (Brickell & Scott, 1976; Stanley, 1977) had shown that there needs to be a parallel between course content and test content to gain valid data, it was important to consider whether courses would be more or less relevant to knowledge about consumer economics. None of the students surveyed had taken Economics 11 (the only Provincial course in economics), so analysis was conducted on the most appropriate course taken, viz. General Business 12. This course is used as an alternative to Economics 11 in many British Columbia schools. Two comparisons were made:

(i) those with General Business 12 versus those with one or more other electives (is General Business 12 better than the other elective?)

(ii) those with General Business 12 versus those with no electives at all (is General Business 12 better than nothing?)

4. The final component of each question was that the electives would be the only thing that made any practical difference (irrespective of all other sophisticated analyses). Effect size analysis was used here.

In the regression analyses, the F-tests on the amount of variance in the dependent variable absorbed by each predictor are tests of the unique association between the predictor and the dependent variable. At the last step in the analysis Cohen and Cohen (1975) refer to this procedure as using Model II error and recommend it on the basis of conservatism for studies of the kind done here.

Formal Schooling and Knowledge about Consumer Economics

The first question addressed was whether formal schooling had any effect on the amount of knowledge of consumer economics possessed by the students. Table 2 shows that taking some economics related courses was associated reliably with knowledge ($F = 2.733$, $p < .10$). However, when the analysis was partitioned by the number of consumer economic-related courses (Table 3), the results show that taking more courses made no reliable difference to knowledge. Thus whilst taking more courses does not seem to help, it does not hamper either. It is noticeable, however, that the slope of the 'course' predictor is negative.

When the analysis was partitioned only by school subject area (Business Education, Consumer Math, Home Economics, Social Studies) and GPA (Table 4) only Home Economics courses made a statistically reliable contribution ($F = 3.220$, $p < .05$); that contribution however was an inverse one. The complete summary is reported in this case to offer the reader a range and subject area comparison and to indicate the small degree of contribution made by the various subjects to the variance in scores on the TUE.

Table 2

Regression Analysis of Knowledge(TUE score)
by Students With and Without Formal Training

Variable	r^2	Increase R^2	Cumulative R^2	b	F
Dependent: TUE					
Predictors:					
GPA	.10868	.10868	.10868	4.4266	18.694 ****
sex	.01202	.01871	.12739	3.3547	4.186 **
life experience	.03754	.04179	.16918	2.4379	5.789 **
S.E.S.	.01070	.01577	.18494	0.0459	3.045 *
'Some vs. None'	.00453	.01892	.20386	4.6008	2.733 *
			(constant)	23.29288	

Table 3

Regression Analysis of Knowledge(TUE score)
by students with More or Fewer Formal Training Courses

Variable	r^2	Increase R^2	Cumulative R^2	b	F
Dependent: TUE					
Predictors					
GPA	.10868	.10868	.10868	4.1373	16.574 ****
sex	.01202	.01871	.12739	3.0229	3.400 *
life experience	.03754	.04179	.16918	2.6054	6.591 **
S.E.S.	.01070	.01577	.18494	0.0393	2.244 *
Courses	.01023	.00040	.18534	-0.6669	0.056
(constant)				28.17129	

Table 4

Regression Analysis of Knowledge(TUE score)
by Students with Training in Specific
School Subject Areas

Variable	r^2	Increase R^2	Cumulative R^2	b	F
Dependent: TUE					
Predictors					
GPA	.15130	.15130	.15130	5.1213	29.119****
Home Economics	.16129	.01305	.16435	- 0.9664	3.220**
Business Ed.	.03751	.00285	.16719	0.7669	0.823
Consumer Math	.12335	.00157	.16876	- 1.2653	0.369
Social Studies	.04954	.00048	.16925	0.4493	0.106
			(constant)	37.55249	

*p < .10(two-tail)
**p < .05
***p < .01
****p < .005

N = 121

Readers may question the simple relation between students' knowledge of economics and the number of economics-related electives that students take. In other words, "Doesn't taking more economics-related electives increase students' knowledge of economics when such fancy statistical analyses are set aside?" To address this issue, a separate analysis was undertaken.

Assume that students with no economics-related electives are representative of students in general. Hence, their average score on the TUE would correspond to the 50th percentile. By comparing this percentile to that for the groups of students that have taken successively more electives, this more straightforward question can be addressed by examining effect sizes as discussed earlier. Table 5 shows the breakdown of TUE by courses, the effect size along with standard error of means and 90% confidence bands. The results show that an effect size of $0.33\sigma_x$ is found only when more than five electives are studied. Fewer than five electives show no practical significance over taking none at all. Thus while there was a statistically reliable result in the analysis comparing students with some courses versus none, effect size analysis failed to show the existence of any practical significance. There is room in these analyses to debate the significance of taking one or more courses to the acquisition of knowledge. Whilst taking some courses was a statistically significant predictor, taking even one course fell far below the criterion level. These figures however, are biased, for no allowance has been made in Table 5 for the control exerted by the other predictors in the equation.

Table 5

Breakdown of TUE by Course

Number of Courses	\bar{X}	SEm	σ_x	%-ile	90% confidence.
0 (69)	48.06	1.32		50	
1 (56)	49.43	1.39	0.117	54	47.22 - 51.88
2 (33)	46.61	2.32	-0.124	46	42.56 - 50.42
3 (19)	46.42	1.83	-0.014	45	43.11 - 49.45
4 (20)	45.50	2.77	-0.219	43	40.49 - 50.07
5 (14)	45.57	1.88	-0.212	43	42.03 - 48.69
5+ (15)	42.27	2.60	-0.495	33	37.23 - 46.33

N = 226

Once the first elective was taken, however, the effect of further electives was detrimental to understanding economics at least as this was measured by TUE.

Figure 1 describes graphically the results in Table 5. The 90% confidence bands overlap at all levels and the marginally decreasing effect is shown by the regression line of TUE means on the number of electives studied. The regression equation was

$$\text{TUE}(\bar{X}) = -0.866(\text{number of electives}) + 48.921$$

The negative regression coefficient shows that there is a declining trend in mean scores as the number of electives studied increases.

Figure 2 illustrates the situation when the contributions made by the other predictors have been partitioned. The intercept in Figure 2 is reduced because of the control exerted by those predictors entering before 'courses'. The reader is thus provided with both biased and unbiased descriptions; the declining trend is evident in both cases.

Figure 1 Graphical Presentation of Table 5 Data

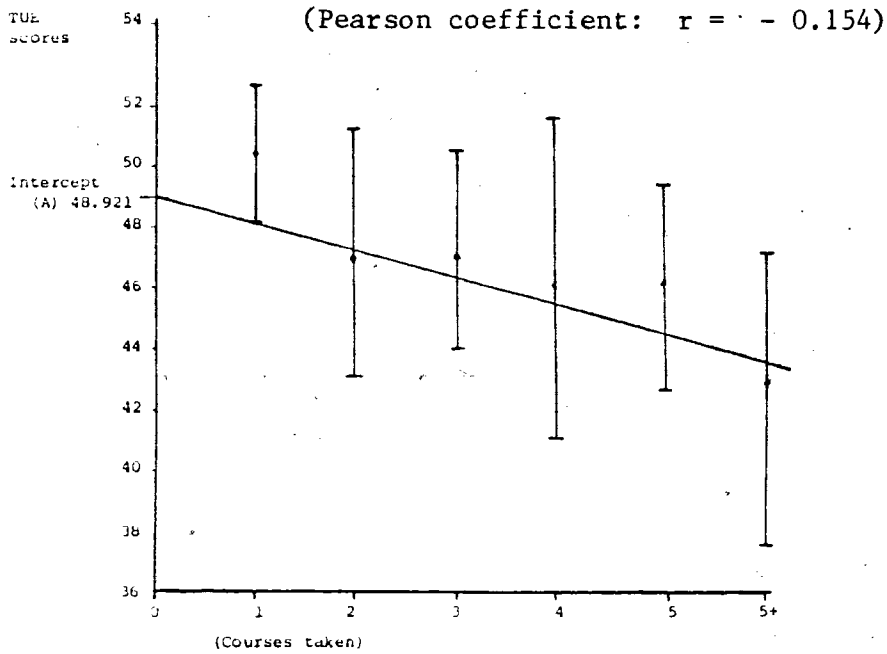
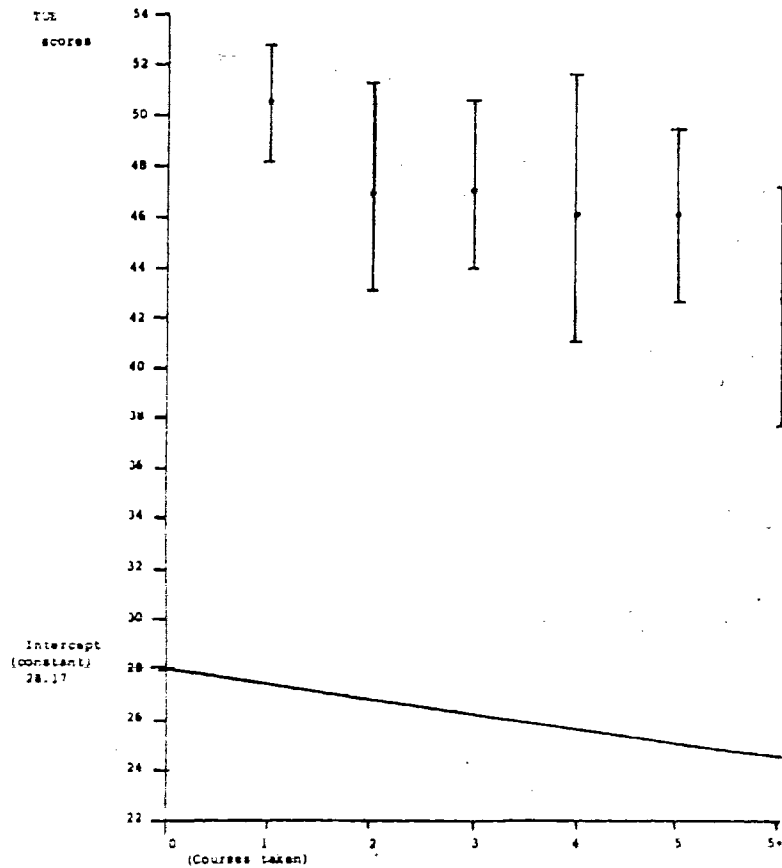


Figure 2. Graphical Presentation of Table 5 data
(controlled for other predictors)

Slope: $B = -0.667$



The single major factor in the regressions so far had been grade-point average (GPA). This variable had always been reliable beyond the 0.005 level with respect to knowledge, thus it seemed to be the most powerful factor. The search for the practical significance of general intellectual ability with respect to electives are summarised in Table 6.

Table 6
Breakdown of GPA by Number of Electives

Courses	(N)	\bar{X}	S	SE _m	Effect Size(E.S.)
0	(69)	2.414	0.750	0.096	
1	(56)	2.254	0.693	0.161	-0.213
2	(33)	2.128	0.906	0.178	-0.382
3	(19)	2.015	0.806	0.202	-0.532
4.	(20)	1.741	0.574	0.135	-0.897
5	(14)	1.893	0.830	0.240	-0.694
6.	(6)	1.992	0.658	0.269	-0.563
7	(5)	1.477	0.465	0.269	-1.249
8	(4)	2.570	0.420	0.210	0.208

Table 6 shows a strong and inverse relationship between general intellectual ability and the number of electives taken. Between two and seven courses taken, the effect size is considerably beyond the $0.33\sigma_x$ minimum level. With such effect sizes, it seems plausible that even further study of consumer economic-related electives could not cause enough effect to overcome the deficit in general intellectual ability in the students. The effect size of eight electives differs from all others and even though it is less than the a priori minimum level, it could be disregarded as an oddity. Further, the correlation between GPA and electives was $-.22$ (statistically reliable at the 0.001 level) showing that the electives were being studied by students of lesser general intellectual ability: a factor that would confound the practical effects of the electives themselves. But what of the practical effect of General Business 12? Might not the same confounding factor be present? Tables 7, 8, 9 and 10 show the results of effect size analysis.

The results in these tables show that compared to those students who have studied none of the electives, General Business 12 students have almost identical negative effect size figures for both TUE and GPA scores. The question is whether the declining knowledge (TUE score) is affected by the course or by the fact that significantly poorer ability students are taking General Business 12. When compared to all other courses, however, knowledge is negatively related to the General Business 12 elective to nearly twice the minimum limit set ($0.33\sigma_x$) yet the GPA predictor is less than the minimum. Thus General Business 12 is less significant than the other courses from a practical point of view.

A caution must, however, be entertained at this point. Only seven

(approximately three per cent) of the students had taken General Business 12. The analyses which have included General Business 12 (especially the linear regressions which appear later) may be considered by some readers as unreliable due to the size and nature of this subgroup.

The degree of difference in the effect size analyses however, demands further investigation of this course in relation to consumer economic knowledge. Thus, because of the relation between students' GPA and their electives, the answer to the simplistic question is not perfectly clear as to whether taking electives has no effect or has a detrimental effect on students' knowledge of economics. Nevertheless, it is clear that such courses do not necessarily enhance students' knowledge.

Table 7

Practical Significance of Knowledge of
General Business 12 Students Compared To That Of
Students Without Any Economics Courses

Control Group: No Electives

Criterion: TUE

	\bar{X}	sd	SEm	Effect Size (σ_x)
General Business 12 (15)	41.20	12.57	3.247	-0.586
Control (69)	48.06	11.70	1.320	

N = 84

Table 8

Practical Significance of Knowledge of
General Business 12 Students Compared
To All Other Students

Control Group: All others

Criterion: TUE score

	\bar{X}	sd	SEm	Effect Size (σ_x)
General Business 12 (15)	41.20	12.57	3.247	-0.590
Control (209)	47.72	10.92	0.755	

N = 224

Table 9

Practical Significance of GPA of General
Business 12 Students To Others Without Any Economics Courses

Control Group: No Elective	\bar{X}	sd	SEm	Effect Size (σ_x)
General Business 12 (8)	2.00	0.43	0.152	-0.549
Control (61)	2.41	0.75	0.096	

N = 69

Table 10

Practical Significance of GPA of General
Business 12 Students to All Other Students

Control Group: All other students	\bar{X}	sd	SEm	Effect Size (σ_x)
General Business 12 (8)	2.00	0.53	0.152	-0.24
Control (184)	2.19	0.78	0.057	

N = 192

Validity of the Test of Understanding Economics

As far as validity is concerned, TUE was included as a predictor variable for the other criterion variables - Attitude and Activism - and will be discussed in relation to those analyses. The same analyses will address the question of construct validity. As for content validity, the items on the TUE were researched for content comparison with the provincial course in economics, Economics 11. The content/behaviour matrix is shown in Appendix B. To reinforce the validity question, a comparison was made with data from the manual which accompanied the Test of Understanding Personal Economics, the major source from which the hybrid was made. The results are shown in Table 11.

Table 11

Comparison of TUE with TUPE

	N	KR20	SEm	Mean	sd
TUPE	403	.86	3.20	23.9	8.60
TUE	226	.93	0.74	23.6	11.13

The results of the comparison show that the TUE is comparable in mean and standard deviation to the nationally standardized TUPE (for senior high school students only). From a concurrent validity frame of reference, it would seem that the TUE does possess validity; its statistical reliability, as measured by KR20 formula, is higher than TUPE.

Formal Schooling and Its Effect on Specific Kinds of Knowledge

The second question addressed was whether different 'kinds' of knowledge (recall/understanding, simple application, complex application) would be affected by formally studying economics courses.

The analysis of data for this question follows the same procedure as for question I. The first question considers whether taking any course is better than no course. The results in Table 12 show that, once the relationship among dependent variables (recall, simple application, complex application) and the statistically reliable predictors has been controlled by multiple regression analysis, the difference between students who have and who have not taken electives is a statistically reliable predictor only for Complex Application (higher level cognitive) skills. Previous education research has shown that to test lower level cognitive skills (recall, understanding and simple application) reliably would require test content and course content to be closely related. Further, research in Consumer Psychology has shown that the cognitive skills used by consumers are more likely to be the higher level skills (analysis, synthesis, evaluation). The statistically significant contribution made by the electives to the more complex application shows that students have learned to apply the details to problems that diverge from the course content. Therefore a test of general economic knowledge seems to be a good predictor of abilities found most used and desirable by consumer psychology research.

It is also important to consider that what life's experiences have taught students is significant at all cognitive levels. Courses which incorporate as many 'everyday' settings and examples in the content rather than academic exercising of details would encourage transfer of learning of those skills regarded as essential for effective consumer activity.

Table 12

Regression Analysis of Specific Kinds
of Knowledge by Students with Some Training
Versus Those With No Training

a) Dependent Variable Recall/understanding

	r^2	Increase R^2	Cumulative R^2	b	F
GPA	.01392	.01392	.01392	2.10839	2.074*
Sex	.01208	.01436	.02829	3.36646	2.039*
Life Experiences	.02366	.02610	.05439	2.61616	3.230*
			(constant)	27.29487	

b) Dependent Variable: Simple Application

	r^2	Increase R^2	Cumulative R^2	b	F
GPA	.07264	.07264	.07264	3.71248	9.466****
Life Experiences	.01401	.01460	.08724	1.65175	1.888*
			(constant)	42.06169	

c) Dependent: Complex Application

	r^2	Increase R^2	Cumulative R^2	b	F
SES	.01954	.01954	.01954	0.10225	4.474**
Sex	.01445	.01635	.03589	6.34118	4.447**
GPA	.08857	.09419	.13008	7.30294	15.126****
Life Experiences	.02300	.03114	.16122	3.55635	3.668*
Some vs. none	.00400	.01932	.18054	8.40490	2.711*
			(constant)	3.04586	

*p < 0.10 level (one-tail)
**p < 0.05 level

***p < 0.01 level
****p < 0.005 level

Taking some electives, then, is associated with achievement requiring some cognitive skills, namely complex application. The next question addressed was whether taking more rather than fewer electives affect the acquisition and use of these skills (namely, recall and understanding, simple application, and complex application). The data were applied to a regression analysis using the specific kinds of knowledge as dependent variables. Apart from the beta (standardised regression coefficient) indices changing in the regression equation, the results for this test were the same as those for Table 12. Therefore, whilst taking some electives is better than none in the acquisition and use of higher level cognitive skills, taking more electives does not contribute any more ability in the use of the skills than taking fewer.

The third question then is to see if taking General Business 12 is more efficacious than no electives or whether it is better than the other economics-related courses. The results are shown in Tables 13 and 14 (Recall and Understanding), Tables 15 and 16 (Simple Application), Tables 17 and 18 (Complex Application).

The results in Tables 13 and 14 show that Life Experiences are the major predictor related to recall and understanding ($F = 2.53, p = 0.10$; $F = 6.032, p = 0.05$). General Business 12 is not associated reliably with recall and understanding consumer economics facts.

Table 13

Regression Analysis of Recall/Understanding
of General Business 12 Students Compared to Students
With No Other Economics-Related Courses

Criterion: Recall/Understanding

Predictor:	Increase		Cumulative	b	F
	r^2	R^2	R^2		
Life Experiences	.14489	.02099	.02099	2.32928	2.53*
		(constant)		34.10820	

Table 14

Regression of Recall/Understanding of
General Business 12 Students Compared
To Those Who Have Taken Other Economics-Related Courses

Criterion: Recall/Understanding

Predictor:	Increase		Cumulative	b	F
	r^2	R^2	R^2		
Sex	.03391	.03391	.03391	5.27779	4.704**
Life Experience	.04261	.04840	.08231	3.69673	6.032**
Instruction Style	.01448	.01808	.10039	-2.21128	2.110*
		(constant)		34.68401	

*p < .10

**p < .05

***p < .01

****p < .005

N = 121

When the data were analysed for their relationship to simple application of knowledge, GPA was the major predictor ($F = 9.073$, $p < 0.005$; $F = 8.450$, $p < 0.005$). General Business 12 was not reliably associated with simple application skills when compared to students who had taken no economics-related courses, however, the scores of General Business 12 students was reliably, but inversely associated ($F = 2.661$, $p < 0.10$) when compared to scores of students taking other economics-related courses.

Before one draws conclusions about the negative relationship, however, the caution stated earlier about the exceedingly small sample needs to be considered. The size of the predictor subsample ($N = 7$) may be regarded by some as being too small for any association to be considered reliable, however, the practical significance ($E.S. = -0.586$) was twice the level set as being a reasonable difference even though the effect size of the subsample's GPA ($E.S. = -0.24$) was below the set limit. The results are included in that they may stimulate further investigation.

Table 15

Regression of Simple Application of Knowledge
of General Business 12 Students Compared
To Those Who Took No Formal Training

Criterion: Simple Application

Predictor:	r^2	Increase		Cumulative		
		R^2	R^2	R^2	b	F
GPA	.07140	.07140	.07140	.07140	3.62663	9.073****
			(constant)	46.84691		

Table 16
Regression of Simple Application Scores
of General Business 12 Students Compared
to Those With Other Courses

Dependent: Simple Application	r^2	Increase R^2	Cumulative R^2	b	F
Predictor:					
GPA	.07034	.07034	.07034	3.72438	8.450***
Age	.00906	.01550	.08584	3.64097	3.174*
Life Experiences	.02140	.01593	.10177	2.00072	2.490*
G.B.12 vs Other	.00841	.02241	.12418	-7.15601	2.661*
		(constant)		-20.21035	
*p < .10(two-tail)					
**p < .05					
***p < .01					
****p < .005 N=121					

When the data were analysed for their relationship to complex application (Tables 17 & 18), GPA was again the major predictor (F = 12.865, p < 0.001; F = 11.322, p < 0.001). General Business 12 was not associated reliably with the higher level cognitive skills.

Table 17
Regression of Complex Application Scores
of General Business 12 Students Compared
to Those with Other Courses

Dependent: Complex Application	r^2	Increase R^2	Cumulative R^2	b	F
Predictor:					
S.E.S.	.01635	.01635	.01635	0.08258	2.977*
GPA	.08788	.08700	.10335	6.62952	12.865****
sex	.01143	.01958	.12294	5.24306	3.071*
Life Experiences	.01930	.02721	.15015	3.55422	3.683*
		(constant)		14.03035	
*p < .10(two-tail)					
**p < .05					
***p < .01					
****p < .001 N = 121					

Table 18

Regression of Complex Application Scores
of General Business Students with Those
with Other Courses

Dependent:Complex Application

	r^2	Increase R^2	Cumulative R^2	b	F
Predictor:					
S.E.S.	.02747	.02747	.02747	0.10574	4.070 **
sex	.02267	.02280	.05028	6.46702	3.945 **
GPA	.08887	.09569	.14569	6.85529	11.322 ****
Life Experience	.03044	.03074	.17671	3.96717	3.883 *
		(constant)		10.98075	

*p < .10(two-tail)

**p < .05

***p < .01

****p < .005

N = 121

Thus whilst the content of this course is considered by schools to have a more consistent relationship to "economic" knowledge (viz., Economics 11), there is no evidence that taking this course will give or enhance the skills needed to solve economic problems. On the other hand there is no evidence that any other elective made any reliable contribution either.

All the analyses so far have shown that characteristics of students, namely their grade point average, and their everyday life experiences are more associated with knowledge than the formal schooling designed to teach economics fundamentals.

Analysis of Contribution of Non-School Variables

Much of the literature recognized a positive contribution made by demographic variables and everyday experiences (Blishen, 1967; Fox, 1978; Moschis & Churchill, 1977; Jacoby, 1976; Palmer, 1967; Reynolds & Darden, 1971). The results of the various analyses so far have shown that non-

6

school predictors collectively make a larger contribution to the variance in knowledge and cognitive skills than do school-based predictors when the large effect of GPA is statistically controlled. The students' belief that their everyday experiences contribute to economic and consumer-related knowledge was substantiated by the analyses. It was the only predictor (apart from GPA) to exhibit a statistically reliable relationship to knowledge throughout. SES, a prominent factor in much prior research was well below an acceptable level of reliability in many of the relationships. Where the relationship was found to be statistically reliable, it was at, or slightly below, the 0.10 (two-tail) level of reliability. The most reliable relationship for SES was between SES and those students who study the electives. The results of analysis between these two predictors ($F = 4.8841$; $p = 0.02$; Effect size = $-0.353 \sigma_x$) show that students from lower SES backgrounds are studying the electives. Whilst these electives have been shown not to improve one's knowledge, they have made reliable contributions to the cognitive skills found useful in consumer-related decision-making. It will be important to see if these electives make reliable contributions to flexibility in attitudes and consumer activism. The lower SES student is thus exposed more to the information-seeking skills than knowledge per se. Is this an important consideration?

In a world full of information is knowledge retention necessary or even used to any extent? Jacoby found (1976) that knowledge per se is less significant to consumer effectiveness than the spheres of influence (discussed in chapter two) people seek out when engaged in consumer-related activities. It would be important to examine the consistency of information retained and the degree to which students rely on influence of others. In

the follow-up interview, with questions exercising knowledge and examining different degrees of influence in decision-making, the following results were found from a Pearson correlation analysis:

Table 19

Pearson Coefficients

Criterion:TUE(knowledge) Scores		
Predictors		
Knowledge Check	.3920	(p = .09)
Influence	- .7386	(p = .002)
N = 23		

The correlations are both statistically reliable. The correlation between knowledge and influence is very strong but inverse. This indicated that those who possessed less knowledge relied on the influence of friends and family more in consumer-related activity and firmly supports the previous conclusions of Jacoby. If the students do not wish to be "...led like school children..." (Piaget, 1930) as consumers, it is important that their reliance upon the influence of others be mediated by more flexible and discriminating attitudes. If these were combined with effective cognitive skills, the student would surely have the basis for being an effective and discriminating consumer.

III. ANALYSES CONCERNING THE RELATIONSHIPS BETWEEN FORMAL SCHOOLING AND FLEXIBILITY OF ATTITUDES

This study is concerned primarily with the knowledge component of learning. The transfer of knowledge learning per se, is an academic

question whereas the transfer of learning from an academic setting to a 'daily living' setting requires that the knowledge component be combined with behavioural elements. Previous studies have shown that the development of attitudes is a prime component of a behavioural outcome. Jacoby (1976) stated that attitudes play a significant role in consumer decision-making. Moschis and Churchill (1977) showed that more flexible attitudes were directly related to more effective consumer activism: knowledge acquisition per se played a minor role in such behaviour. Jacoby showed that consumers use very little information in their consumption activities. It is possible that knowledge may interfere with consumer decision-making; Brickell & Scott (1976) stated that the more knowledgeable students were also more conservative (less flexible) in their attitudes. Further, Toole (1977) showed that just because one possesses more information, there is no evidence to show that one makes better decisions as a consequence.

The second criterion therefore was 'Flexibility of Attitudes'. The predictor variables were regressed against this criterion. 'TUE' (knowledge) was also made a predictor in order to substantiate previous research findings. The initial correlations between knowledge and attitudes (Table 1) showed that there was a statistically reliable relationship between them; this seemed to refute Brickell and Scott.

The results in Table 20 show that over and above all other predictors, no contribution is made by taking courses compared to taking none. There is a reliable and inversely proportional relationship between flexibility of attitudes and taking more electives rather than fewer. Two observations about the relationship between the knowledge students believe they have

gained from everyday life experiences and the flexibility of their attitudes are important. In both analyses, this was an inverse relation. In previous analyses of knowledge, life's experiences has been a consistently reliable and directly proportional predictor. In these analyses, whilst knowledge is a reliable and directly proportional predictor of flexibility of attitudes, ($F = 4.598$, $p < .05$) life's experiences relate inversely to attitude flexibility ($F = 4.194$, $p < .05$). Although no statistically reliable relationship was found between attitudes and GPA, the regression result is reported to clarify Toole's point (p. 66). General intellectual ability (or the possession of and ability to utilise) may contribute to improved specific knowledge but it is the specific knowledge that is transferred to attitude formation. We shall see later however (p. 70) that possession of specific knowledge contributes reliably to consumer activism. The total variance contributed by all the reliable predictors is ten percent or less. This allows the possibility that other variables, not covered in this survey, may strongly affect the flexibility of attitudes. The regression disagrees with the findings of Brickell and Scott (1978), who found that greater knowledge related directly to less flexible attitudes, however, they studied only those students who had taken economics as an academic study. Would their findings have been substantiated by surveying students who had taken General Business 12?

Table 20

Regression Analysis of Attitude
Flexibility in Students

(a) Between students who have and who have no formal training

Criterion: Attitude

Predictor	r^2	Increase R^2	Cumulative R^2	b	F
GPA	.02987	.02987	.02987	.13022	1.134
TUE	.04242	.02493	.05480	.02242	4.598 **
Life Experience	.02262	.03354	.08834	-0.23826	4.194 **
		(constant)		5.36918	

*p < .10(two-tail)

**p < .05

***p < .01

****p < .005 N = 121

(b) Between those who have more formal training and those who have less.

Predictor:	r^2	Increase R^2	Cumulative R^2	b	F
GPA	.02987	.02987	.02987	.09939	0.655
TUE	.04242	.02493	.05480	.02170	4.365**
Life Experience	.02262	.03354	.08834	-0.22377	3.735*
Electives	.03703	.02160	.10993	-0.07462	2.742*
		(Constant)		5.62396	

The results in Table 21 show that once the non-school predictors have been controlled, General Business 12 is not a reliable predictor of attitudes when compared to other electives. But is this course reliable when compared to those students who had studied no electives?

The results in Table 22 show that General Business 12 is not a reliable predictor of attitudes when compared to those held by students who had studied no economics-related courses.

Table 21

Regression Analysis of Attitude Flexibility
of General Business 12 Students
Compared to All Other Students

Dependent: Attitudes

Predictor	r^2	Increase R^2	Cumulative R^2	b	F
TUE	.05466	.05466	.05466	.02931	8.355***
Life Experiences	.01705	.03613	.09080	-.24313	4.093**
			(constant)	5.29155	

N = 121

Table 22

Regression Analysis of Attitude Flexibility
of General Business 12 Students Compared
to Students with No Formal Training

Dependent: Attitudes

Predictor:	r^2	Increase R^2	Cumulative R^2	b	F
GPA	.02987	.02987	.02987	.13022	1.134
TUE	.04242	.02493	.05480	.02242	4.598**
Life Experience	.02262	.03354	.08834	-.23826	4.194**
			(constant)	5.36918	

N = 121

If General Business 12 is not a reliable predictor of attitude flexibility, yet taking more rather than fewer courses does make a reliable, albeit inverse, contribution, then courses other than General Business 12 must affect the formation of attitudes. This might give support to Brickell and Scott's conclusions, however, the variance of the contribution is very small (2%).

If the contribution of formal schooling to the development of more flexible attitudes is not reliable, then can formal schooling reliably contribute to consumer decision-making? This question was addressed in analyses similar to those used for knowledge and attitudes.

Table 23

Regression Analysis of Consumer Activism
Between Those who have Some Formal Training
and Those Students who have No Formal Training

Dependent: Activism

Predictor	r^2	Increase R^2	Cumulative R^2	b	F
sex	.01432	.01432	.01432	-0.08619	0.814
GPA	.13576	.12951	.14383	.26709	20.898 ****
School Experience	.02941	.04389	.18772	.17557	6.161 **
			(constant)	3.09267	

N = 121

The results of this analysis show that taking some rather than no electives is not a reliable predictor of consumer activism. Further, even though it is not a statistically reliable relationship, female students report being more active than male students.

Table 24
 Regression Analysis of Consumer Activism of
 Students With More Formal Training Compared
 to Students with Less Formal Training

Dependent: Activism

Predictor	r^2	Increase R^2	Cumulative R^2	b	F
sex	.01432	.01432	.01432	-0.16122	2.677 *
GPA	.13571	.12951	.14383	.25500	18.529 ****
School					
Experience	.02941	.04389	.18772	.19553	7.949 ***
Electives	.02418	.02700	.21472	-0.05467	4.875 **
Instructional					
Style	.00123	.01465	.22937	.00656	2.187 *
			(constant)	3.066495	

N = 121

The results in Table 24 show that taking more courses is a reliable but inversely proportional predictor of consumer activism. At the same time, the belief by the students that they have learned some economics from the electives is a reliable and directly proportional predictor of consumer activism. This is important. Whilst they believe they have learned, there is no evidence that the electives make any contribution. This seems to support Toole's conclusions. It is also significant to see the instructional style of teaching in the electives having a reliable and directly proportional relationship to activism. It gives support to the non-lecture method being better for imparting ideas related to a behavioural criterion, especially when one considers prior analysis (p. 60) which showed a reliable but inverse relationship between lower level cognitive skills and instructional style. Those who had not been lectured to were able to recall and understand better.

The contribution made by General Business 12 over and above all other predictors was not a reliable measure when compared both to those students who had taken other electives and to those who had studied none of the electives. Again the small sample size should be remembered.

SUMMARY

The overall pattern shows that non-school variables (social osmosis) contribute substantially more than formal schooling to consumer-related knowledge, flexibility of attitudes and consumer activism. Over and above all other predictors, the general intellectual ability of the students contributes more to all aspects of consumer-related behaviour. Should one therefore strive to factor out those life experiences which contribute directly to consumer knowledge and behaviour and incorporate them into the curricula, inculcate the problem-solving abilities of the more able students into the teaching process or focus consumer education outside the formal structure of the school?

Many of the obtained correlations and other statistical indicators were in the direction predicted by earlier research but at neither a statistical nor a practical level of significance. It has been interesting to see that traditionally held opinions about studying courses and their effects on knowledge have little to support them in this case. The contribution made to knowledge by studying electives in consumer economics has been shown to be so unreliable that specific treatment/outcome research will be needed. The implications of these observations will be considered in the final chapter.

CHAPTER 5
DISCUSSION

Many educators, citizens and business representatives hold that economic and consumer-related education is essential for students if they are to acquire effective consumer skills. Not surprisingly, curriculum design and programming has been revised to reflect this belief and to provide the means for achieving this goal. Many of the curriculum revisions made in the past five years have had 'economic literacy' as an integral part of their scope and sequence. Thus, a great deal of time and public funding has been spent on attempting to achieve the goal.

Formal research, as we have seen (Chapter two), has not supported the belief that formal instruction will produce more competent consumers. The researchers have in fact debated whether this is possible; so, the issue remains a controversy.

The basic purpose of this study has been to determine what implications exist for materials, methodology and curriculum design for the development of consumer-related skills. Such a task has not been attempted by educational authorities in British Columbia before, despite the various curricular changes in courses within the domain of economics education.

This writer's main concern has been that findings should have a practical application and that drawing conclusions based solely on primary statistical analysis without regard to the practical implications of small but reliable effects should be avoided. The practical effects of formal instruction in consumer-related concepts are of far greater import to students. 'Effect Size' analysis has not been included as a research tool in any previous study of this subject. Conclusions from this study should,

therefore, be established more firmly than those from prior research and should overcome the problems of debatable statistical reliability due to sample size (Glass, 1976; Kerlinger, 1979).

Conclusions About Correlations Between Demographic and Educational Factors, And What Is Learned

Whilst many correlations of the survey subscales (p.40) were found to be statistically reliable, previous research had found much higher reliability coefficients in the knowledge (TUE), attitude, and activism variables. This was especially true for the attitude and activism subscales. Prior studies had, however, used much larger sample sizes and a wider range of school and residential environments. Thus very low correlations would show much higher reliability coefficients. On the basis of the evidence cited in Chapter 4, the coefficients found in this study thus compare favourably to those found by previous instruments.

The basic conclusion drawn from the correlations was that students with higher general intellectual ability (GPA) possessed more knowledge, had more flexible attitudes toward consumption and indicated that they would be more active consumers. Further, there existed the possibility that formal instruction might have negative contributions to the acquisition of knowledge about consumerism. These initial indicators seemed to lend support to the postulates of Stephens and of Stigler, and to support conclusions concerning knowledge from the work of Brickell & Scott (1976), Moschis & Churchill (1975), and Toole (1977). The correlation between knowledge and flexibility of attitudes and consumer activism, however, ran contrary to those conclusions.

Conclusions In Relation To The Acquisition Of Knowledge Through Formal Instruction

Taking some instruction accounted for two per cent of the variance in knowledge compared to not taking any. Taking more courses rather than fewer, however, did not make any statistically reliable difference. Effect size analysis found that an inverse relationship existed throughout which became greater than $0.33\sigma_x$ after five courses had been studied.

GPA was found to be the greatest contributor to the variance in knowledge. A practical difference greater than $-0.33\sigma_x$ was found in GPA of students who had studied more than two courses in economics or consumer-related concepts. Such a large inverse effect size could have been a confound to determining whether knowledge was related to the instruction or to the general cognitive abilities of the students who have been exposed to the ideas.

Of all the elective areas, taking either General Business 12 (the alternate economics course) or Home Economics courses was not found to be positively related to gains in knowledge about consumer-related concepts when compared to all other areas. It was concluded that the positive contribution made to the variance in consumer-related knowledge was made by courses less directly related to economics or consumer-related concepts.

The study of the electives contributed more to variance in higher level cognitive skills (complex application) than to other types of knowledge (recall/understanding, simple application).

Consumer psychology has shown these higher level skills to be the more necessary for economic satisfaction.

The correlation between TUE scores and the follow-up interview scores

of knowledge was very high. This showed not only a consistency in responses but also gave support to Stigler's hypothesis concerning the nature of the test used. (p.5)

Conclusions In Relation To Flexibility Of Attitudes

Whilst formal study per se showed no statistically reliable or practically reliable difference, taking more courses was found to be related to students reporting less flexible attitudes. This finding supports strongly the conclusions of Brickell and Scott (1976). Those students who also were younger and were female indicated more flexible attitudes than others, as did those with lower knowledge scores. Those who believed that daily life experiences had contributed to their knowledge were found to possess less flexible attitudes. These findings all support previous research, in that being male, being older and being more knowledgeable is related positively to the possession of more conservative attitudes about economic life.

Conclusions In Relation To Consumer Activism

The basic conclusion drawn from the results was that, whilst students believe they know more, there is no evidence to show they can use that knowledge more effectively as consumers. Further, the less knowledgeable the students, the more likely they are to be influenced in their consumer behaviour by other people. There can be students who believe they know more (because they have studied relevant courses) who actually may not. As such they must compensate by being influenced by others; this would be an effective solution to a cognitively dissonant state.

There is a dichotomy inherent in such a situation, however, that concerns this writer. On the one hand, belief in more knowledge has been

shown to give the impression of being more independent yet, on the other hand, actually knowing less, whether they believe it or not, leads to being influenced, therefore being less independent. This situation is exactly that referred to by Scitovsky (1960) as the economic ignorance in the market place and led to his extrapolation that vested interests in the market place would be able to exercise substantial control over the consumer without his being aware of their influence. Further, Toole (1977) showed that more information per se can not presuppose greater competence even though such competency is often assumed. Thus, a general belief in the knowledge/activism value of formal instruction in consumer-related fields could leave the students with a false sense of their own competency as consumers. Such a state could allow exploitation of these consumers in the market place.

Is it now possible that we could be teaching these children to become more 'illiterate' consumers? Such inconsistency of previous research has not been explained by the results of this study.

Few guidelines exist for curriculum design in consumer-related electives. The dichotomies that exist between what the results of this survey show and what students believe they know, is disturbing. This situation has changed little since the writings of John Maynard Keynes (1930) on the economic possibilities for the future, Scitovsky's hypothesis of the entrapment of consumers by vested interests (1960) and Packard's writings on the ability of advertising to persuade consumers into desiring goods and services (1972).

Problems of low reliability in the subscales, the evident (or apparent) lack of adequate variables to explain fully the relationships among the

data and the lack of cohesion of responses seems to be an ongoing problem in this type of research. As the reliability co-efficients of the knowledge, attitude and activism subscales are comparable to standardised studies it is concluded that either the number of potential variables needed to describe consumer-related skills and/or behaviour is very large, or that the behaviour of consumers is, as has been theorised, possibly stochastic in nature.

Implications

The basic purposes for evaluating students' knowledge and attitudes related to consumerism were suggested in chapter two. First, if economic literacy is an ideal worth striving for, it will have to be identified, defined, and then analysed for its social and educational parameters. If literacy were thus to be defined in terms of behavioural criteria, curriculum could be built on a more effective criterion-referenced foundation. Until 'literacy' is so established, this writer questions how formal instruction can possibly advance it. No study to date seems to have satisfied this requirement. Such literacy could forever be a questionable ideal.

Awareness of the characteristics of consumer behaviour by educational practitioners and curriculum designers is also essential if courses in consumer economics are to be practically effective. Such knowledge will provide curriculum developers with explanations which would encourage transfer of learning from the classroom to the market place. Knowledge of the general level of ability of those who study these electives will determine the nature and complexity of materials and possibly the degree

of transfer they might readily expect. The type of knowledge they design methodology for will determine the nature of the teaching style required for the most effective transfer of learning, and for more effective consumer behaviour. These factors must therefore be considered in the design and exposition of materials and methods. The bias indicated by this study and by studies in consumer psychology would be toward the development of higher level cognitive skills and more flexible attitudes. A future study of the effects of current Social Studies Curriculum Revision would provide an extensive basis upon which to assess the achievement of these ends.

Finally, the contribution made by social osmosis to the acquisition of consumer-related skills still has to be factored out. This variable has been included generally in all previous research but none of these studies has analysed it for its social and educational parameters. The results of such analysis could then be applied to the knowledge gained from the other transfer of learning suggestions made above to develop more specific instructional treatments. An interim research goal could be to analyse the effects of spheres of influence and the development of discriminating attitudes on consumer behaviour and apply the findings to teaching.

If, as Jacoby (1976) has suggested, consumer behaviour could be random, then there is, clearly, difficulty for the educator. It would be vital to establish whether it is random or not through determining whether there is a propensity to systematic behaviour. If it is random, there would be little point in providing consumer economics courses per se. If it is not random, then it can be taught, for skills would not be acquired by chance. Either way, teaching to behavioural criteria will mean exercising

information processing skills and the training of evaluation skills rather than the traditional recall and understanding/exposition methodology. Such an approach should result in greater consumer satisfaction as students would learn how to make more effective judgements and to accept the consequences of their choices.

Summary

Over the years of research into economic literacy or competency, there has been an ongoing controversy as to what constitutes a competent consumer. This study has not resolved this issue nor did it set out to. It may well be necessary to abandon this line of research in consumer education because of the continuing inconsistencies and lack of resolution of the questions posed in and by the studies. In order to develop behavioural parameters for curriculum design in consumer-related electives, an alternative method would be to develop research based on naturalistic observation in the field. Direct observation of consumer behaviour coupled with interviewing and questioning of subjects would provide data of a causal nature which empirical studies cannot provide. If these studies were to be coupled with marketing research and the theories and research of consumer psychology, education would possess a more eclectic base for developing curriculum and materials.

There are two possible avenues; first one could film adults whilst shopping, then interview them whilst they watch themselves on tape. This would provide us with a two-point reference. Second, there could be observation of the behaviour of small children who go along with their parents as co-consumers. If, as has been hypothesised by this writer, consumption

behaviour is learned by children whilst they are still being trucked around stores in the store buggies, then we would have to analyse their behaviour to find what they notice and do whilst the parent is selecting goods. These two avenues could then be developed as follows; first, behaviours of the adults and of the co-consumers could be compared to find those features that are held in common. This action would determine whether or not the behaviour is stochastic or structured and would allow educators to develop more effective curriculum and methodology. Second, longitudinal studies of the consumer behaviour of children would provide a basis for describing and analysing the development of these behaviours over time.

These would allow educators to develop curriculum on a more flexible base thus giving schools the ability to encourage the development of consumer-related skills which are appropriate to the age of the child. Consumer psychology would also add to its knowledge of where, when, and how people acquire and develop their insights into satisfying economic choices. If we are 'creatures of the environment' then such developmental work would enable educators to do more for young consumers than elementary behaviour modification. Such modification, when viewed in the context of 'skill development' gives the impression that the person is more competent but all it may be doing is to enslave the consumer to the manipulations of vested interests.

Stephens said that in our "...spontaneous communicative tendencies..." (1967) we should talk of what we know, supply answers that elude others, and point to the moral of our teaching. We know the economic principles that affect consumption; we know why people save. These principles act as general grounding principles. From observation, we have theorized on the

behaviour of consumers (psychology provides some tools to explain them) however, our ability to explain behaviour confidently often still eludes us. Thus the methods for teaching for transfer of learning are possibly as stochastic as the behaviours themselves.

But where is the 'moral' that Stephens spoke of? Do the consumer-related behaviours have a 'survival value'? or are we assuming there is a right and wrong (competent/incompetent) type of consumer behaviour? These are not necessarily compatible questions. If the behaviours do not have a proven survival value then it would seem that demanding formal instruction in consumer-related skills is a manipulation of educational services by vested interests, however well-intentioned. If this is the case, stressing the 'principles' alone will have little payoff for the consumer.

This writer suggests therefore, that before we deal with the inconsistencies and controversies that surround the development of consumer-related educational research and curriculum design and revision; before we prove that formal consumer economic instruction will or will not lead to economically satisfied consumers, we need to assign specific and definable 'survival values' to consumer competency. This will require us to know the behavioural components more thoroughly.

Until the parameters of competency are operationally defined, the ideal of 'economic literacy' in general is purely a political persuasion.

APPENDICES

Student name _____ GPA _____

Survey Questionnaire

Please answer all questions. Ignore numbers printed beneath or at the side of answer spaces; they are for office use only.

1. In what year were you born? _____
1

2. What is your sex: (0) Female (1) Male? _____
2

3. How much do you think you know about economics:
(a) from what you have learned in school?
(1) none (2) little (3) some (4) a lot. _____
3

(b) from what you have learned in day-to-day experiences?
(1) none (2) little (3) some (4) a lot. _____
4

4. Which of the following elective courses have you studied? (Place a check mark against each taken).

- | | |
|--|---|
| <input type="checkbox"/> Accounting 11 | <input type="checkbox"/> Foods 9 |
| <input type="checkbox"/> Accounting 12 | <input type="checkbox"/> Foods 10 |
| <input type="checkbox"/> Consumer Fundamentals 10 | <input type="checkbox"/> Foods 11 |
| <input type="checkbox"/> General Business 11 | <input type="checkbox"/> Foods 12A |
| <input type="checkbox"/> General Business 12 | <input type="checkbox"/> Foods 12B |
| <input type="checkbox"/> Marketing 11 | <input type="checkbox"/> S.O.S. 10 |
| <input type="checkbox"/> Office Practice 12 | <input type="checkbox"/> Textiles 11 |
| <input type="checkbox"/> Personal/Business Records 9 | <input type="checkbox"/> Textiles 12 |
| | <input type="checkbox"/> Marriage/Family Life 12. |
| <input type="checkbox"/> Economics 11 | |
| <input type="checkbox"/> Law 11 | <input type="checkbox"/> Consumer Math 11 |
| <input type="checkbox"/> History 12 | |
| <input type="checkbox"/> Geography 12 | |

This space for office use only.

Total area: (1) _____ (2) _____ (3) _____ (4) _____ sum: _____

5. In the electives you took, you may have received instruction by 'Lecture' (teacher talking or using textbook exercises) or by 'Other' styles (e.g. field trips, film, personal discovery simulations). Check one below that best describes the style you received in the elective courses.

- (1) All 'Lecture' - no 'Other'
- (2) Mostly 'Lecture' - some 'Other'
- (3) Half 'Lecture' - half 'Other'
- (4) Some 'Lecture' - mostly 'Other'
- (5) No 'Lecture' - All 'Other'

6

6. Write in the spaces below the occupation of your parent(s) or guardian(s) (please include 'deceased', 'retired', 'unemployed' if it applies).

Father _____

7

Mother _____

8

7. For each of the following, check ONE of the responses:

- (1) don't know.
- (2) never
- (3) rarely
- (4) sometimes
- (5) quite a lot.

a. I keep track of the money I spend and save.

1 2 3 4 5

b. I shop around before buying something that costs a lot of money.

1 2 3 4 5

c. I read carefully MOST of the things written on labels or packages.

1 2 3 4 5

d. I compare prices and brands before buying something that costs a lot of money.

1 2 3 4 5

e. I try to buy returnable cans & bottles instead of non-returnable ones.

1 2 3 4 5

8. Here are some ideas about advertising, products, stores and salespeople. For each statement, check whether you :

- (1) strongly disagree
- (2) partly disagree
- (3) no opinion/not sure
- (4) partly agree
- (5) strongly agree.

a. Advertising makes people buy things they don't really need.

1 2 3 4 5

b. Quality products are made only by well-known companies.

1 2 3 4 5

c. Once I have chosen where to buy from I prefer to shop there without trying other stores.

1 2 3 4 5

d. When I see or hear something new advertised, I often want to buy it-

1 2 3 4 5

e. I prefer a certain brand of most products I buy or use.

1 2 3 4 5

f. Most advertising that comes through the mail is junk and not worth looking at.

1 2 3 4 5

g. Many brand names of products are of poor quality.

1 2 3 4 5

h. Most products sold at reduced price are of poor quality.

1 2 3 4 5

i. Salespeople are honest

1 2 3 4 5

j. I don't pay much attention to advertising.

1 2 3 4 5

I want you to now study the test attached and complete the answer sheet provided. Thank you for your help in this project.

TEST OF UNDERSTANDING IN ECONOMICS

Directions

This test is designed to measure your understanding of personal economics. Not all students will have taken a formal course in economics, but most have learned something about the subject in their regular courses, through reading, listening to the radio, or watching television. These questions will measure how well you understand the principles of economics and the way our economy operates. It is probable that you will not know the answers to some questions. However, you should answer *every* question by marking what you think is the best choice, using the information you do have in selecting your answer. Work at a comfortable speed, but do not spend too much time on any one item.

The test consists of fifty questions or incomplete statements, for each of which you are to choose the *one best answer*. Even though in some instances more than one answer may appear to be correct, your task is to choose the *best* answer. After you have read the question and chosen your answer, use your pencil to blacken the space on the answer sheet that corresponds to the answer you have chosen. Now read the sample questions below and mark your answers on the answer sheet.

Sample Question 1

For which of the following groups is the average income lowest?

- A. Business executives
- B. Physicians
- C. Engineers
- D. Farmers

Sample Question 2

The federal government exercises the closest control over

- A. banking and money
- B. high school education
- C. food distribution
- D. oil companies

Sample Question 3

Prices are usually lower for a product when

- A. only one company produces it
- B. several competing companies produce it
- C. labor unions are strong where it is produced
- D. the federal government controls its production

Do not open this test booklet until you are told to do so.

1. In a free market what factor is most important in determining which goods and services will be produced and how much they will cost?
 - A. State government
 - B. Price control mechanism
 - C. Supply and demand
 - D. Consumer needs

2. Which of the following usually tends to hold down prices for a product?
 - A. Only one company makes the article.
 - B. Several competing companies make it.
 - C. Strong labor unions control production.
 - D. Foreign imports are prohibited.

3. Which of the following questions is faced by all economic systems (i.e. tradition, command and market)?
 - A. How will corporations be organized?
 - B. How can markets be kept competitive?
 - C. What goods and services will be produced?
 - D. How will governments protect private property?

4. The Gleasons can spend about \$2250 a year for rent. Which of the following rents is the most they can afford to pay each month?
 - A. \$100
 - B. \$185
 - C. \$200
 - D. \$225

5. If a government is considering either an increase in the sales tax or the tax on personal incomes, which alternative is considered generally to be more favorable to low-income people and why?
 - A. Sales tax, because this falls equally on everyone and the rich can't escape it.
 - B. Sales tax, because rates are lower than those in the case of income taxes.
 - C. Personal income tax, because it is collected only on investment income.
 - D. Personal income tax, because this kind of tax tends to take a higher percentage of income from rich people.

6. Mary Wilson's grocery bill is too high because she buys things she doesn't need. Which of the following is the best way to help cut down her grocery bill?
 - A. Send her husband to buy the groceries.
 - B. Make and use a shopping list.
 - C. Buy only the specials.
 - D. Buy for 1 meal at a time.

7. A husband who accepts the practice of having his family eat in restaurants frequently while encouraging his wife to continue her teaching career is probably
- A. recognizing the principle of comparative advantage.
 - B. aware that food in restaurants is more nutritious.
 - C. applying the principle of supply and demand.
 - D. more interested in himself than his family.
8. "Human wants are greater than the resources that are available to satisfy them." This implies the need for
- A. leaving decisions to fate.
 - B. working harder.
 - C. making choices to allocate resources.
 - D. asking for less.
9. In a market economy, the public interest is served even when individuals pursue their own private economic goals, because of
- A. the operation of competitive markets.
 - B. the social responsibility of business leaders.
 - C. careful planning and coordination of market activity
 - D. individuals who understand what is in the public interest.
10. Which one of the following is most likely to increase a person's lifetime earning capacity?
- A. Support increases in the level of government minimum wage rates.
 - B. Obtain as much education as possible.
 - C. Move to a state in which per capita income is increasing.
 - D. Prod the government to increase Social Security benefits.
11. As the income of a family rises, it is likely to spend a smaller proportion of its income for
- A. travel.
 - B. taxes.
 - C. recreation.
 - D. food.
12. A general principle of managing "savings" is that at least part of it should be readily available to spend. "Savings" would be most available if
- A. placed in a bank savings account.
 - B. invested in collector's coins.
 - C. invested in real estate.
 - D. used to buy a partnership in a small business.

13.

LESLIE ANN WILLIAMS 1928 S.W. 85th St. Portland, Oregon 97219	No. 380 _____ 19 _____	Line 1
PAY TO THE ORDER OF _____	\$ _____	Line 2
_____	DOLLARS	Line 3
National Bank of Oregon Southfield Branch Portland, Oregon 97219	_____	Line 4
⑆1230 00124070 018152 8 380		

Leslie Williams is making out a check for \$18.50 worth of groceries at Sam's Grocery. What should Leslie write on Line 3?

- A. *Eighteen and 50/100*
- B. *18.50*
- C. *Sam's Grocery*
- D. *Leslie Ann Williams*

14. What are the four major factors of production?

- A. Oil, land, gas, electricity.
- B. Banking, investing, manufacturing, managing.
- C. Wages, rent, interest, capital.
- D. Land, labor, capital, management.

15. A student who spends less money to buy records and uses this money to buy more books when he realizes records are giving him decreasing satisfaction is probably applying the principle of

- A. comparative advantage.
- B. supply and demand.
- C. diminishing returns.
- D. laissez-faire.

16. You read the following headline: "COFFEE GROWERS FORM MONOPOLY". How will the new coffee monopoly most likely differ from a highly competitive coffee growing industry?

- A. Profits in the coffee industry will now be certain.
- B. The coffee growers will increase their use of capital goods.
- C. The coffee growers will increase output and hire more workers.
- D. There will be less incentive for the coffee growers to be efficient.

17. The specialization of labor results in

- A. more economic interdependence.
- B. increased price inflation.
- C. less output per man-hour.
- D. more equal distribution of income.

18. Noreen and Dick want to get their daughter, Beth, a top-quality 10-speed bicycle. To find the best make, they should
- A. ask all Beth's friends who own 10-speeds which one is best.
 - B. ask several bicycle salesmen what they think.
 - C. read a consumer's guide at the library.
 - D. read very carefully the advertisements for 10-speed bicycles.
19. A key factor underlying the principle of insurance is that the insurance
- A. reduces the chances of accident or death.
 - B. enables individuals to share losses.
 - C. lowers the total cost of accidents.
 - D. shifts the financial burden away from government.
20. The Consumer Price Index is an indicator of
- A. the level of prices at one time compared to a previous time.
 - B. changes in consumer choices for particular products.
 - C. the total of consumer spending for particular products.
 - D. whether a product is a bargain.
21. Generally, the largest portion of money in local government budgets is spent for
- A. education.
 - B. protection from crime.
 - C. maintenance of streets.
 - D. public housing.
22. The Livingstons are going on a 2-week vacation. They want to protect their house from burglars while they're gone. Which of the following things will NOT help protect their house from burglars?
- A. Shutting off the main water supply.
 - B. Asking neighbors to pick up newspapers and mail.
 - C. Connecting some lights to automatic timers.
 - D. Locking all the doors and windows.
23. The Smith family felt it could use a larger house and a new car. It found two houses on the market which would meet their needs but the one costing about \$5,000 more had several more desirable features. The Smith's current financial condition would enable them to buy either the more expensive house or the less expensive house and a new car. The Smiths decided to buy the more expensive house. What was the opportunity cost of the decision?
- A. A new car.
 - B. \$5,000.
 - C. A less expensive house.
 - D. A new house.
24. Which of the following groups is typically hurt the most by unexpected inflation?
- A. Farmers.
 - B. Debtors.
 - C. Lenders.
 - D. Manufacturers.

25. Burt thinks it would be a good idea to make a list of everything of value in his house. Which of the following types of information would Burt NOT need to include on his list?
- A. The name of each item.
 - B. The serial number of each item.
 - C. The weight of each item.
 - D. The value of each item.
26. A consumer wishes to determine if a merchant has a good reputation for fair dealing in his community. One source to secure such information would be the
- A. U.S. Department of Commerce.
 - B. newspaper.
 - C. Consumer Index.
 - D. Better Business Bureau.
27. The functions of money are to serve as
- A. a determinant of capital spending and aggregate supply.
 - B. a unit of account, a medium of exchange, and a store of value.
 - C. a determinant of investment, consumption and aggregate demand.
 - D. a stabilizing force, a means of income redistribution, and a resource allocator.
28. Which of the following involves the greatest risk?
- A. Purchase of a life insurance policy.
 - B. Investment in corporate stocks.
 - C. Investment in corporate bonds.
 - D. Depositing in savings account.
29. The money value of a house, less the mortgage money still due on it, is the homeowner's
- A. lien.
 - B. equity.
 - C. depreciation.
 - D. dividend.
30. In many recent votes on school budgets, citizens have defeated school tax proposals and forced schools to eliminate extracurricular activities because of a lack of funds. What, if any, are the opportunity costs of such decisions?
- A. Since less money will be spent there are no opportunity costs.
 - B. Whatever benefits there might have been from the extracurricular activities.
 - C. The opportunity to use school facilities fully.
 - D. The costs of what taxpayers will now buy with what they saved.

31. Some economists believe that a progressive tax is the fairest method of raising government funds. An example of a progressive tax is
- A. property tax.
 - B. sales tax.
 - C. excise tax.
 - D. income tax.

32.

.....

**Satisfaction Guaranteed
Or Your Money Back**

Whatever you buy at Smith's, you have the right to use it for a reasonable time before you determine it is satisfactory and decide to keep it. If you decide it is not satisfactory, return it to us. We will do whatever is necessary to correct the cause of your dissatisfaction. If we can't satisfactorily provide a remedy, or if you request a refund, we will refund your full purchase price including any appropriate delivery charges, finance charges and applicable taxes.

Smith's Pledge of Fairness. If, after you have decided to keep your purchase, it doesn't give you the service or performance you reasonably expect of it and there isn't a specific warranty on the item that will satisfactorily correct the problem, please let us know.

We want to make an adjustment that you will consider fair.

.....

- According to the policy statement shown above, what would you do if you bought something at Smith's and then didn't like the way it worked?
- A. Keep it.
 - B. Take it back to Smith's.
 - C. Take it to a local repair shop.
 - D. Write to the Consumer Goods Repair Service.
33. What determines the value of the dollar?
- A. How much it will buy.
 - B. The World Bank.
 - C. How much the government wants it to be worth.
 - D. The value of the gold buried at Fort Knox.
34. Increased taxation is the preferred method of financing government spending when
- A. the interest rate is low.
 - B. corporate profits are low.
 - C. the economy is experiencing inflation.
 - D. the economy is experiencing a recession.

35. One advantage of the corporate form of business organization is that
- A. corporations do not pay taxes.
 - B. stockholders make larger profits.
 - C. stockholders have limited liability.
 - D. corporations are larger than other forms of business.
36. In order to determine whether an increase in personal income over a period of time represents an increase in real levels of living, which one of the following would be of least importance?
- A. Size and composition of Gross National Product.
 - B. Consumer Price Index.
 - C. Amount of leisure time.
 - D. Exchange rate.
37. A factory worker engaged in making printing presses is creating what type of goods?
- A. Consumer goods.
 - B. Nondurable goods.
 - C. Capital goods.
 - D. None of the above.
38. What is the effect of advertising on the prices of goods to consumers?
- A. It has little effect on prices.
 - B. It insures fair prices.
 - C. It may contribute to higher prices immediately and lower prices in the long run.
 - D. It raises prices.
39. A major objective of personal budgeting or planned spending is to
- A. decrease expenditures for luxuries.
 - B. develop a useful relationship between income and spending priorities.
 - C. eliminate the need for borrowing.
 - D. make certain that more money is set aside regularly in a savings account.
40. The rule of rational choice is always to select that alternative
- A. whose benefits exceed its costs.
 - B. whose costs are lowest.
 - C. which will be valuable for the longest period of time.
 - D. which brings fastest returns.
41. Although there is a lot of talk about the power of unions, they are unable to actually control the supply of labour to business.
- A. definitely true
 - B. possibly true
 - C. possibly false
 - D. definitely false

42. If you buy a good from a store that is defective, that store must take it back in exchange or must repair it for you.
- A. definitely true
 - B. possibly true
 - C. possibly false
 - D. definitely false
43. The Better Business Bureau helps consumers, not merchants.
- A. definitely true
 - B. possibly true
 - C. possibly false
 - D. definitely false
44. All products must show the name of the company that makes them.
- A. definitely true
 - B. possibly true
 - C. possibly false
 - D. definitely false

Choose about how much money you think the AVERAGE CANADIAN FAMILY with two children and a total monthly income of \$1,000 spends on each expense item in the following budget.

The average family spends about:

45. for FOOD A. \$100. B. \$150. C. \$250. D. \$350.
46. for CLOTHES A. \$100. B. \$150. C. \$250. D. \$350.
47. for HOME EXPENSES (house payments, upkeep, repairs, etc.)
- A. \$100.
 - B. \$200.
 - C. \$300.
 - D. \$450.
48. for AUTOMOBILE EXPENSES - one car: (Payments, maintenance, gas)
- A. \$150.
 - B. \$300.
 - C. \$400.
 - D. \$500.
49. for OTHER EXPENSES (recreation, personal care items)
- A. \$100.
 - B. \$250.
 - C. \$300.
 - D. \$400.
50. for SAVING (money put aside)
- A. \$100.
 - B. \$250.
 - C. \$300.
 - D. \$400.

Appendix B CONTENT/BEHAVIOUR MATRIX

(TUCE ratings)	RU	SA	CA	
Behaviour Ec.11 Content	Information Recall	Comprehension of concepts & relations.	Articulation of practical solutions.	Total questions
1.Economic problem scarcity/choice	40	3.8.9.	-	4
2.Markets: supply/demand opportunity cost:diminishing returns.		1.2 15.23		4
3.PRODUCTION factors. units goods size employment	14.35.37. 44.	17.41	16	7
4CONSUMPTION wants prices C.P.I. comp.advantage budgeting	20.32	6.7.22.26.38. 42.43.	18.39.45.46 47.48.49.50	17
5. MONEY/BANKING functions features saving,investing borrowing insurance inflation/defl.	13.19.24. 27.29.	12.25.28.33		9
6. INCOME wages interest profit rent	11	4	10. 36.	4
7.EC. POLICY Gov.finance taxation fiscal/monetary policy business cycles	21	31	5.30.34	5
	14 (28%)	22 (44%)	14 (28%)	50

Appendix C TUE mean difficulty by question.

The figures below show the degree of difficulty of each question according to the percentage of students (preparation volunteers) who got the item right.

1	75	11	25	21	42	31.	67	41.	78
2.	83	12.	33	22.	67	32.	67	42.	58
3.	50	13.	25	23.	42	33.	50	43.	33
4.	67	14.	83	24.	42	34.	75	44.	100
5.	42	15.	25	25.	58	35.	33	45.	42
6.	67	16.	67	26.	58	36.	42	46.	25
7.	58	17.	58	27.	67	37.	33	47.	42
8.	67	18.	67	28.	33	38.	67	48.	42
9.	50	19.	33	29.	58	39.	50	49.	42
10	67	20.	50	30.	42	40.	50	50.	25

Mean difficulty = 51.04% , Sd = 18.28

Mean difficulty by Content/Behaviour.

Behaviour Content Area:	Behaviour			CONTENT TOTAL
	RU	SA	CA	
1.	25%	58.5%	-	47.3%
2.	33%	69.3%		54.8%
3.	54.5%	44.6%	8%	41.8%
4.	50%	47.3%	72.5%	61.5%
5.	41.5%	56%	60.5%	55.2%
6.	25%	47%	46%	43%
7.	33%	39.5%	42%	38.8%
Behaviour Total	40.1%	51.68%	58.5%	51.04%

APPENDIX D

Subsample Interview Questions

- A. 1. What was your reaction to the test you took the other day?
2. How well do you think you did on the test?
3. Does your family receive a newspaper regularly?
4. Do you or your family make regular trips to local stores?
5. Do you believe that what you learn in school will be valuable to outside school?
- B. Please answer the following to the best of your ability.
(1) TRUE (2) FALSE (3) DON'T KNOW.
1. When there is INFLATION we can buy more with our money. _____
2. If a lot of people choose not to buy a certain item, the retailer usually lowers the price. _____
3. It doesn't matter what system you live under, someone must still choose which goods and services to produce. _____
4. When a person pays income tax, he pays a fixed proportion of his income. _____
5. Although we can get credit from many places, only the chartered banks (such as the Royal Bank) can actually create money. _____
6. A mortgage is the down payment on a house. _____
7. When you buy stock you own part of the company. _____
8. When you liability insurance, you don't have to pay for wrecking someone else's car. _____
9. A 'shortage economy' is when a country is short of money. _____
10. A credit union is a group of people who agree to save their money together and make loans to each other. _____
- C. Check whether each of the following happens: (1) Never, (2) Rarely (3) Sometimes (4) Often (5) Very Often.
1. My parents tell me what things I should or shouldn't buy. _____
2. My friends and I talk about buying things. _____

3. My parents ask me what I think about things they buy for themselves. _____
4. My friends and I talk about things we see advertised. _____
5. My parents and I talk about things we see advertised. _____
6. I ask my parents for advice about buying things. _____
7. My friends ask me for advice about buying things. _____
8. I go shopping with my family. _____
9. My parents and I talk about buying things. _____
10. I go shopping with my friends. _____

APPENDIX E Frequency Figures and Scattergrams.

TUE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
	16.	1	0.4	0.4	0.4
	18.	2	0.9	0.9	1.3
	20.	1	0.4	0.4	1.8
	24.	5	2.2	2.2	4.0
	26.	2	0.9	0.9	4.9
	28.	2	0.9	0.9	5.8
	30.	7	3.1	3.1	8.8
	32.	3	1.3	1.3	10.2
	34.	3	1.3	1.3	11.5
	36.	10	4.4	4.4	15.9
	38.	9	4.0	4.0	19.9
	40.	16	7.1	7.1	27.0
	42.	12	5.3	5.3	32.3
	44.	17	7.5	7.5	39.8
	46.	20	8.8	8.8	48.7
	48.	15	6.6	6.6	55.3
	50.	17	7.5	7.5	62.8
	52.	16	7.1	7.1	69.9
	54.	17	7.5	7.5	77.4
	56.	11	4.9	4.9	82.3
	58.	10	4.4	4.4	86.7
	60.	7	3.1	3.1	89.8
	62.	8	3.5	3.5	93.4
	64.	1	0.4	0.4	93.8
	66.	6	2.7	2.7	96.5
	68.	3	1.3	1.3	97.8
	70.	2	0.9	0.9	98.7
	76.	3	1.3	1.3	100.0
TOTAL		226	100.0	100.0	

VALID CASES 226 MISSING CASES 0

ATTPER

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
	30.	1	0.4	0.5	0.5
	33.	1	0.4	0.5	0.9
	34.	1	0.4	0.5	1.4
	38.	2	0.9	0.9	2.3
	39.	1	0.4	0.5	2.7
	41.	4	1.8	1.8	4.6
	43.	2	0.9	0.9	5.5
	44.	3	1.3	1.4	6.8
	45.	1	0.4	0.5	7.3
	46.	4	1.8	1.8	9.1
	48.	9	4.0	4.1	13.2
	49.	7	3.1	3.2	16.4
	50.	1	0.4	0.5	16.9
	51.	11	4.9	5.0	21.9
	53.	8	3.5	3.7	25.6
	54.	12	5.3	5.5	31.1
	55.	2	0.9	0.9	32.0
	56.	18	8.0	8.2	40.2
	58.	11	4.9	5.0	45.2
	59.	11	4.9	5.0	50.2
	60.	9	4.0	4.1	54.3
	61.	13	5.8	5.9	60.3
	63.	12	5.3	5.5	65.8
	64.	4	1.8	1.8	67.6
	65.	7	3.1	3.2	70.8
	66.	9	4.0	4.1	74.9
	68.	11	4.9	5.0	79.9
	69.	7	3.1	3.2	83.1
	71.	4	1.8	1.8	84.9
	73.	6	2.7	2.7	87.7
	74.	5	2.2	2.3	90.0
	75.	2	0.9	0.9	90.9
	76.	3	1.3	1.4	92.2
	78.	5	2.2	2.3	94.5
	79.	6	2.7	2.7	97.3
	84.	1	0.4	0.5	97.7
	85.	1	0.4	0.5	98.2
	86.	1	0.4	0.5	98.6
	88.	1	0.4	0.5	99.1
	90.	1	0.4	0.5	99.5
	93.	1	0.4	0.5	100.0
	9.	7	3.1	MISSING	100.0
TOTAL		226	100.0	100.0	

VALID CASES

219

MISSING CASES

7

ACTIVISM

CATEGORY LABEL CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
2.	1	0.4	0.4	0.4
3.	4	1.8	1.8	2.2
3.	10	4.4	4.5	6.7
3.	7	3.1	3.1	9.8
3.	10	4.4	4.5	14.3
3.	10	4.4	4.5	18.8
4.	10	4.4	4.5	23.2
4.	29	12.8	12.9	36.2
4.	32	14.2	14.3	50.4
4.	38	16.8	17.0	67.4
4.	24	10.6	10.7	78.1
5.	26	11.5	11.6	89.7
5.	19	8.4	8.5	98.2
5.	4	1.8	1.8	100.0
9.	2	0.9	<u>MISSING</u>	100.0
TOTAL	226	100.0	100.0	

VALID CASES 224 MISSING CASES 2

SCATTERGRAM OF (DOWN) TUE (ACROSS) COURSE

	0.40	1.20	2.00	2.80	3.60	4.40	5.20	6.00	6.80	7.60
76.00	2									
70.00	2									
64.00	2	2								
58.00	3	2	2							
52.00	4	2	2	3	2					
46.00	4	2	2	2	2	2				
40.00	2	2	2	2	2	2	2			
34.00	2	2	2	2	2	2	2	2		
28.00	2	2	2	2	2	2	2	2	2	
22.00	2	2	2	2	2	2	2	2	2	2
16.00	2	2	2	2	2	2	2	2	2	2

STATISTICS..

CORRELATION (R) -	-0.15440	R SQUARED	0.02364	SIGNIFICANCE	0.01025
STD ERR OF EST -	11.04056	INTERCEPT (A) -	48.92099	SLOPE (B)	-0.56609
PLOTTED VALUES -	225	EXCLUDED VALUES -	0	MISSING VALUES -	0

***** IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

RUN ON ATTITUDE SCALE

(CREATION DATE = 03/31/801)

(DOWN) ATTITUDE

(ACROSS) COURSE

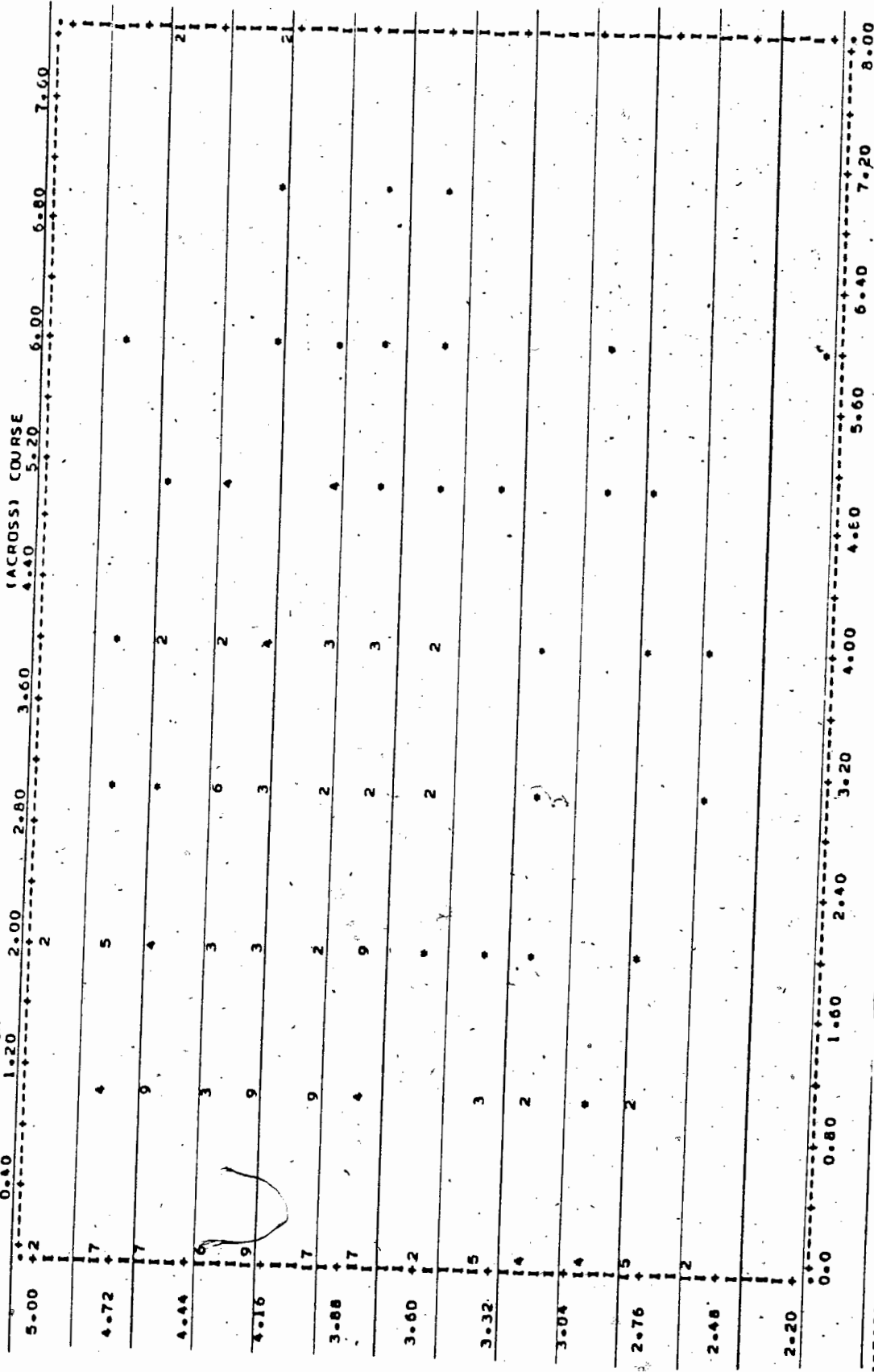
SCATTERGRAM OF	0.40	1.20	2.00	2.30	3.60	4.50	5.20	6.00	6.80	7.60
9.33
8.70
8.07	.	.	2	.	.	.	.	.	.	.
7.43
6.80	.	.	2	4	.	.	.	.	.	.
6.17	2	2	.	.	.	.
5.53	.	.	2	.	.	.	.	.	.	.
4.90
4.27
3.63
3.00

STATISTICS**

0.0	0.80	1.60	2.40	3.20	4.00	4.80	5.60	6.40	7.20	8.00
CORRELATION (R) =	-0.17918	R SQUARED =	0.03211	SIGNIFICANCE =	0.00100					
STD ERR OF EST =	1.07625	INTERCEPT (A) =	6.25828	SLOPE (B) =	-0.09766					
PLOTTED VALUES =	218	EXCLUDED VALUES =	0	MISSING VALUES =	7					

***** IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

SCATTERGRAM OF (DOWN) ACTIVISM



STATISTICS..

CORRELATION (R) =	-0.00744	R SQUARED =	0.00006	SIGNIFICANCE =	0.45603
STD ERR OF EST =	0.58428	INTERCEPT (A) =	4.01377	SLOPE (B) =	-0.00217
PLOTTED VALUES =	223	EXCLUDED VALUES =	0	MISSING VALUES =	2

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