# Project Business: A Quasi-Experimental Study of Co-operative Interaction Between Schools and Industry

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B R O C K U N I V E R S I T Y

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### ABSTRACT

This project is a quasi-experimental study involving eight classrooms in two senior elementary schools in St. Catharines, Ontario which received a Project Business Program and were pre- and post-tested to determine the growth of knowledge acquisition in the area of business concepts. Four classrooms received a Project Business treatment while four classrooms acted as a control. The Project Business Program is sponsored by Junior Achievement of Canada; it occurred during a twelveweek period, February to May 1981, and is run by business consultants who, through Action, Dialogue and Career Exploration, teach children about economics and business related topics. The consultants were matched with teacher co-ordinators in whose classrooms they taught and with whom they discussed field trips, students, lesson planning, etc.

The statistical analysis of pre- and post-test means revealed a significant statistical growth in the area of knowledge acquisition on the part of those students who received the Project Business Program. This confirms that Project Business makes a difference.

A search of the literature appears to advocate economic programs like Project Business, which are broadly based, relevant and process-oriented.

This program recommends itself as a model for other areas of co-operative curricular interactions and as a bridge to future trends and as a result several fruitful areas of research are suggested.

# TABLE OF CONTENTS

|  |   | Page                                     |  |  |
|--|---|--|--|--|
| ACKNOWLE DGEMENTS                      |   |  |  |  |
| ABSTRACT                               |   | iii                                      |  |  |
| LIST OF TABLES                         |   | v  |  |  |
| CHAPTER ONE                            | Introduction Statement of the Problem Rationale for the Study Background to the Study Assumptions and Limitations Definitions of Terms Hypotheses Summary of Chapter One Footnotes                  | 1<br>2<br>2<br>6<br>10<br>11<br>12<br>14 |  |  |
| CHAPTER TWO                            | Search of the Literature Introduction School-Initiated Ventures Business-Initiated Co-operative Programs Selected Problems and Directions of Co-operative Programs Summary of Chapter Two Footnotes | 16<br>16<br>17<br>23<br>27<br>32<br>34   |  |  |
| CHAPTER THREE                          | Research Design Introduction The Sample Selection Instrumentation Summary of Chapter Three Footnotes  | 38<br>38<br>38<br>39<br>46<br>47         |  |  |
| CHAPTER FOUR                           | Introduction Findings of the Hypotheses Discussion of the Hypotheses Summary of Chapter Four Footnotes  | 48<br>48<br>50<br>51<br>52               |  |  |
| CHAPTER FIVE                           | Re-Statement of the Problem Main Features of the Method Main Findings of the Study Investigator's Conclusions Based Upon  | 53<br>53<br>54                           |  |  |
|  | the Findings<br>Other Research Arising from this Project<br>Conclusion<br>Footnotes   | 55<br>56<br>61<br>62                     |  |  |
| BIBLIOGRAPHY                           |   | 63                                       |  |  |
| APPENDIX 1<br>APPENDIX 2<br>APPENDIX 3 | Student Information Sheet<br>Description of Research Instruments<br>A Summary of the Research Methodology   | 66<br>82<br>83                           |  |  |

# LIST OF TABLES

|       |     |            |     |                    | Pag       | ge |
|-------|-----|------------|-----|--------------------|-----------|----|
| TABLE | I - | Hypothesis | 0ne | (HO <sub>1</sub> ) | Pre-Test  | 48 |
| TABLE | II- | Hypothesis | Two | (HO <sub>2</sub> ) | Post-Test | 49 |

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### Introduction

Predictions for the future all point to rapid changes, changes in the way we live, work and interact. As certain as futurists are that change is inevitable; as uncertain are they about how such change can be absorbed without the inevitable breakdown, disruption and alienation which follows any drastic, abrupt change. Education is no exception. It has long been more insulated, self-sufficient and resistant to rapid upheaval than most other segments of society. While this may be viewed as conservative and backward, it does have a tendency to give connection and stability to an otherwise estranged world. Change, in education, should whenever feasible be an evolutionary process. It should be a response to and an outgrowth of need and not based upon some innovative ideological whim. Whenever innovation is introduced, evaluation must follow for only when the effects of a program are demonstrated to add to the child's intellectual, emotional or practical achievements, can it be considered worthy of perpetuation.

Over the past year, by co-operative arrangement between the Lincoln County School Board in St. Catharines, Ontario, and a local business committee known as "Project Business" a planned innovative program has been introduced. It is a program which responds to and builds upon previous work in similar areas. It addresses a present need and holds promise as a model of future interactions in other curricular areas. But it, too, must be studied and researched to ensure that the changes which it advocates will enrich the children's educational process.

## Statement of the Problem

This project is a quasi-experimental study of the Lincoln County - Project Business innovation. Four grade eight classrooms in two elementary schools in St. Catharines, Ontario were given a project business program and their academic achievement measured from a pretest to post-test sequence. At the same time a similar group of four grade eight classes acted as a control group for the experiment, receiving no intervening project business treatment. The study reports the results of this experiment and statistically indicates some possibilities for further research.

### Rationale for the Study

The need for such a program is based upon many factors. The knowledge explosion which demands not only new ways of processing information but also makes it impossible for teachers to become experts in all fields; the high cost of education which limits both expansion of technological equipment in the schools and the development of new programs; and the demand for curriculum relevance in a complex, changing society all require sharing and co-operation to ensure that the needs of both the child and society are well served.

The knowledge explosion has resulted in an alienation of worker from job and person from society. For a time specialization was the hope with which one attacked the ever-enlarging information accumulation. The experts in the various areas were to guard society from making major mistakes. So long as one controlled a particular area, one was secure, established and safe. Children were taught early to choose a specialty subject or to emulate a specific role model be it teacher, lawyer or parent. A person could count on his profession for a lifetime. It gave

him social status, security and goals. But times have changed. The specialist has been declared redundant by machines, by events, by the knowledge explosion. No one can totally know his own area or by knowing it function in that of other specialties. Marshall McLuhan says it best when he states:

One of the flips of our time is that the electronic environment returns man to the condition of the most primitive prober and hunter. 1

The world has grown in complexity, and change is so rapid that there is no security in any one job. The world has become global, interconnected and dependent. Jobs as well as ideas do not exist in spendid isolation. They are influenced by many varying and conflicting factors. Role models are no longer as easily emulated. People change jobs frequently, are declared surplus and must be retrained. Parental jobs have often been replaced by machines. The young child of today faces a conflicting insecure job market. Teachers are no longer on a pedestal. They have trouble serving as role models. All too often a child sees his teacher as someone who deals with the theoretical, the abstract and the useless. Ideally a teacher should connect the real world with that of the classroom environment. The information explosion, the varied curriculum which a teacher is to impart in a limited time to students whose ideas of relevence vary greatly from those of their teachers, makes the task almost doomed from the start. In addition, most teachers cannot possibly become experts in the economic and technological intricacies of the real world. For this reason an interaction between business and school should be as welcome as it is innovative.

For business too, the world has become more complex, global and interconnected. The kinds of graduates they need today must be able to respond to a rapidly changing, demanding market. They need the brightest

minds to solve their problems. This is best put by Antony Jay in Management and Machiavelli where he says:

Economy does not need an actuary: it needs a visionary.<sup>2</sup>

In addition, business needs an educated public which will not only understand and appreciate the free enterprise system but which will be responsive to its aims and serve as regulators and promoters of its goals in their national context.

Business has gone to considerable cost in terms of training its personnel, in developing technological machines and in researching and evaluating programs and markets. It is impossible that schools should or could duplicate such costly facilities or programs. Yet in order to prepare young people for a technological environment it is imperative that they become familiar and knowledgeable about their future realities. To leave the preparation until they are ready for the job market, is to expect a Model T Ford mechanic to fix the Apollo spacecraft. Children must be brought up to date with the reality of the technologies which surround them. Children enjoy and respond well to relevance. Business reflects this reality, at least in part. It can have an exciting and vital impact on education:

By such co-operative programs as Project Business, business serves not only its own needs but frees the schools from costly duplication which could never truly mirror the real business environment. It contributes not only to an innovative curriculum, but also has a direct influence upon students and the needs of society.

Business has had an input into vocational and career education for quite some time. While this has been sufficient in the past, it is so no longer. In today's environment, vocational or career education, as

we know it, does not go far enough. A student's choices are not clear cut. He may have to change jobs frequently or even face unemployment. Preparation for a career involves complex, difficult choices. It involves knowledge, awareness, preparation and above all flexibility. A student must be trained in this area; it cannot be left to chance, nor decided too late. Since careers are connected and influenced by economic factors, a knowledge of economics is essential in the education of children. As future decision-makers they must be aware not only of the problems society faces but be able to judge and question society's values and priorities. To quote T. H. Taylor,

So it is that education must serve the needs of the industrial system, (and these ought to be well and expeditiously served) education must also provide whatever is required for questioning the goals of that system, indeed of any system which manages the individual's wants, economic or social.<sup>3</sup>

In an age of technological complexity, educated, informed decision-making is important for all citizens, young and old. Education should reflect the relevant societal issues. Children must be able to solve problems which they see as real and important. To prepare them for this, education can no longer remain isolated and introverted. Teachers must permit other interactions. They must act as facilitators and initiators to expose a child to many ideas and different role models. But they must also be careful, for while children should be prepared for life, they should not confront its hardships too early. School is a safe place of experimentation, a place where a child is encouraged to take risks, where failure does not destroy but can teach perseverence, acceptance and renewed effort. The function of the teacher in a co-operative endeavour such as Project Business is not diminished, it is enhanced and puts a greater role on him as moral guardian and guide for

the young exploring mind. It takes special teachers to handle such a difficult task well. It takes equally special business consultants to enter the classroom and present their point of view without bias and with openness, honesty and enthusiasm. Only such co-operative, well-developed interactions can prepare a child for a complex future and offer him the relevance and guidance he is entitled to from his educational process.

### Background to the Study

Co-operative ventures between business and education have existed for a long time. Business has always been aware that schools feed them their future workers and has always had some interaction in the educational process. This occurred first in an advisory capacity where business sat on advisory boards of education or lobbied for certain educational rights or aims. This advisory involvement still exists. An interesting explanation of this kind of interaction as well as the reasons why an ultimate gap between education and business occurred in recent times, can be found in Hattan's article "Community Control in Retrospect". 4 Later, the co-operation was extended to include such things as vocational interaction. This took the form of visitations by businessmen to auditoriums for recruiting purposes or classrooms to add personal relevance to a program which a school wished to emphasize. Later still, the vocational emphasis extended to work-study programs, especially popular for the academic non-achievers, which permitted students to experience some success in the real world. The benefits to business in all of these practices were obvious, they were doing it for purposes of recruitment or to educate pupils in career awareness. As the gap between schools and the world of work widened, and school

curricula were chosen more according to interest than future career orientation, business established such programs as Junior Achievement, which is an out-of-school organization that caters to students willing to learn about business by becoming involved in mini-business ventures of their own. A still further involvement between schools and the business are the technological aspects which make schools a huge market to which industry addressed itself. This to some extent involved mainly materials such as kits, machines, audio-visual aids, etc. In some cases, schools were happy to hire a firm to come in and teach a particular course which either involved machinery or materials especially devised for that purpose. Most involvements between schools and business have arisen from or reflect the above kinds of interactions. Documentation done on these problems has addressed itself repeatedly to a descriptive analysis of how these programs were established, how to set up contacts among the parties involved, how to administer the program, its disadvantages and outcomes. Little has been done to evaluate the programs as to their curriculum value. These interactions between schools and business do, however, document vividly both the need for these co-operative ventures and the benefits which can be derived from them.

Project Business moves into a climate which has, to some extent, all of the above co-operative ventures. There are businessmen on the board of education and educators on the Chamber of Commerce. The schools have stressed work study programs at the secondary and post-secondary levels. Although mainly in an incidental way, the curriculum of Ontario does contain an emphasis on citizenship, community awareness and knowledge of society and government. Such occurrences as guest speakers or seminars on business have been used to some extent at the

elementary and more fully at the secondary levels. One such example in Lincoln County is the Career Day of Lincoln County Board of Education. <sup>5</sup> Junior Achievement has been active in the Niagara Region for the past ten years. It is a logical step from these programs to the present project. Project Business, then, does not appear out of a vacuum but is a result of much fertile effort in the co-operative ventures between business and school already in operation. This explains the ease with which it was incorporated and demonstrates why the focus of the study went beyond the usual "how to implement" stage to an analysis of the program itself. This is, for research in this area, both essential and groundbreaking.

Project Business was first introduced in the United States in 1971 by Junior Achievement Inc. The program was developed, tested and officially launched in 1973. Funding for Project Business was granted by the W. K. Kellogg Foundation, the first such grant in the Foundation's fifty-year history to a below-the-college level program.

Today, there are over 5,000 Project Business classes being administered. 6

Project Business was started in Canada by Junior Achievement of Canada. The materials were revised to reflect a Canadian context and then field tested. During the 1979/80 school year, pilot projects were conducted in Calgary, Alberta and Windsor, Ontario. The program was officially launched in Canada in September 1980. There are currently 42 classes receiving Project Business. The major incentive for the growth of Project Business in Canada has come from the generous support of the W. K. Kellogg Foundation, Shell Canada Ltd. and the Bank of Montreal, who have pledged to donate \$700,000 over the next five years to enable Project Business to expand to its fullest potential. 7

In July 1980 Mr. Ross Lawless, the Director of Education for the Lincoln County Board of Education, was approached by a committee from Junior Achievement and the business community about the feasibility of presenting Project Business to Grade Eight classes in St. Catharines. This meeting constituted the beginning of the Project Business Program in St. Catharines. Six grade eight classes from the Lincoln County Board of Education were chosen to receive Project Business treatment and six others were to act as a control group.

A committee which consisted of representatives of Junior

Achievement, the business community and the Lincoln County Board of

Education was established to initiate the program, train personnel and

evaluate the results.

This co-operative program provided twelve weeks of one-hour per week of classroom instruction, discussion and on-site visitations (field trips to businesses) by a qualified business consultant. He discussed with the students such topics as economics, Canadian economy, banking, the stock market, consumerism and career education. The consultant was teamed with a classroom teacher who used Project Business as an extension of his guidance or social studies curriculum. Each used the other's area of expertise for the greater benefit of the students.

The evaluation process received some expert help from the Project Business group of Windsor, Ontario which had just completed its pilot program year and offered much interesting advice and experience. The final evaluation was conducted by Mr. Bruce Knicley of the Lincoln County Board of Education in co-operation with Dr. Bruce Cassie of OISE Niagara and this researcher with the advisement and approval of

Miss Allison Elliot and Mr. Fred Fretz of Junior Achievement of Canada and Niagara respectively.

### Assumptions and Limitations

- 1. This study will deal mainly with the cognitive or knowledge components of the Project Business Program. While it would have been both interesting and profitable to test attitude responses as well, these were dealt with only as they related to career opinion or to the process of the treatment but not to the ideas covered either in the manual or during the actual teaching presentations. Attitudes were not tested because the business representatives were most cautious, and perhaps rightly so, that the program not be perceived as either testing biases for or against business or as an attempt to influence students attitudinally in any way. The intent of the program was to be purely one of imparting knowledge and information about business.
- 2. Evaluations of teachers, consultants and principals, though undertaken by the evaluation group, will not be a part of this study but are dealt with in detail by the Lincoln County Evaluation Report of Bruce Knicley and Dr. Bruce Cassie.
- 3. Useful information on the results of the program as evaluated by a Part D post-questionnaire (see Appendix) will be used when it adds to particular details but again will not constitute an indepth analysis in this report.
- 4. Curriculum research in Canada on the subject of this type of co-operative venture is limited. While co-operative ventures, such as work study programs have been a part of the Canadian scene for some time, they have not been evaluated for curriculum consideration.

What is available deals specifically with either vocational or career education. Co-operative ventures similar to Project Business appear to be more frequent and more established in the United States. Even there the emphasis is mainly on implementation, rationale and how to make contacts and less frequently on the actual effect a program of this kind has on the learning accumulation of students.

### Definition of Terms

<u>Career education</u> - instruction in the types of jobs available, what skills, attitudes and abilities are required and how one would prepare for them.

<u>Consultant</u> - will refer to the person selected from business to teach students the Project Business concepts for the twelve-week period.

<u>Control group</u> - a group of grade eight classes of similar background and vicinity who do not receive Project Business instruction but to whom the pre- and post-tests were administered.

Experimental group - consisted of six classes who received Project
Business treatment. They wrote a pre-test, a post-test plus a part D
post-test.

<u>Field trip</u> - an out-of-school trip to see a company, bank or business in operation, arranged by the business consultant.

Junior Achievement of Canada - a company founded and funded by businessmen to help young high school students to learn about the business world by establishing a mini-business company, electing officers, marketing a product and preparing a statement of profit or loss. It has a Niagara Branch which has been operating in the region for the past ten years.

<u>Manual</u> - will refer to the booklet given to each student by the business consultant outlining the concepts to be learned and exercises to be done.

<u>On-site visitation</u> - a field trip in which students observed workers on the job.

Performance contracting - a process whereby a business is hired by a school to perform a specific service, i.e. upgrading math skills.

Project Business - a co-operative teaching program for grade eight students which teams a person from business with a classroom teacher for instruction about business.

<u>Shadowing</u> - a process whereby a student follows an employee on the job for a given period of time in order to understand that person's job better.

<u>Teacher co-ordinator</u> - the classroom teacher in whose class the consultant works.

<u>Turnkey effect</u> - a process whereby a school observes and learns from a performance contract group and then continues the program when the group leaves.

Vocational training - school training related to jobs.

#### Hypotheses

# HO<sub>1</sub> - Pre-test Hypothesis

There will be no significant differences in achievement as revealed in pre-test results in group 1 (experimental) and group 2 (control).

# $HO_2$ - Post-test Hypothesis

There will be no significant differences in achievement as revealed in post-test results in groups 1 and 2.

# HO<sub>3</sub> - General Hypothesis

There will be more significant statistical growth (p<05) from pre- to post-test in achievement as a result of the Project Business program in the experimental group than in the control group.

### Summary of Chapter One

This quasi-experimental study deals with a group of eight grade eight classrooms in two St. Catharines elementary schools. Four classes were given a Project Business Treatment and pre- and post-tested to measure academic achievement. A similar group of four classes acted as a control group and were pre- and post-tested without any intervening treatment.

This co-operative venture has its justification in the complexity of a rapidly changing world. Economic changes, the need for differing and varied role models, the necessity of informed decision-making and the need for relevance between school and life demand that children deal with processes which will help them solve real problems on a continuing basis. Complexity means sharing not only of costs, but of ideas, of special knowledge and influence. Project Business is an economic developmental program which attempts to do all of the above. A business consultant teamed with a teacher co-ordinator presents to grade eight students concepts of economy, Canadian economy, banking, the stock market, consumerism and careers. Economic education as presented by Project Business is an outgrowth and development of many programs active in this area, and as such reflects a development, responsive attempt to answer a real need for the future educational focus of the schools. Project Business was officially launched in Canada in 1980 as a co-operative venture between the Lincoln County Board of Education and Junior Achievement of Canada and Niagara. It is generously funded by the W. K. Kellogg Foundation, Shell Canada and the Bank of Montreal.

This study will attempt to evaluate the growth in cognitive achievement which results from the Project Business Treatment.

### Footnotes - Chapter One

- Marshall McLuhan, <u>Culture Is Our Business</u>. McGraw Hill, Toronto, 1970. p. 24.
- 2. Antony Jay, <u>Management and Machiavelli</u>, as quoted by Marshall McLuhan in Culture Is Our Business. Ibid. p. 36.
- 3. T. H. Taylor, "Education and the Technostate", The Journal of Educational Thought, Vol. 2, No. 3, Dec. 1968. pp. 150-158.
- 4. Barbara R. Hattan, "Community Control In Retrospect: A Review of Strategies for Community Participation in Education", Community Participation in Education. Allyn and Bacon Inc., Boston, Mass. 1979. pp. 2-22.
- 5. Bruce Knicley, "Careers In The 1980's Day". Lincoln County Board of Education, May 1981.
- 6. Junior Achievement of Canada Manual.
- 7. Ibid.

### CHAPTER TWO

### Search of the Literature

### An Introduction

Interaction between schools and business has in some measure always been taking place. The extent to which this occurred, and the kind of emphasis it received, reflects both the changes in education and the growing socio-economic concerns of the day.

The most general involvement for business and education occurred on advisory committees on Boards of Education and Chambers of Commerce.

Hattan, in her article "Community Control In Retrospect", traces in some detail the role business has played historically in the United States.

She maintains that,

the schools were bureaucratized by educational professionals and elite community influentials to be controlled by them.  $^{\rm 1}$ 

She blames the isolation of schools from other segments of society on the business community input which made schools apolitical. While this had the positive factor of rapid gain for education, it did so by isolating it and making it unresponsive to the changing needs of society.<sup>2</sup>

Be that as it may, schools were very early cognizant of the fact that they could look toward the business community for support or approval of either special programs or as a placement for their students, especially those who did not respond well to the academic nature of schools. Business, on the other hand, looked to education "for a continuing supply of well-educated, well-trained manpower ..." These interactions have been initiated sometimes by schools and sometimes by business.

### School-Initiated Ventures

Aside from the funding of special projects and the co-operative efforts on special boards, school-initiated involvement with business can be classified under three general headings: resource material aid, co-operation in the area known as vocational training and more recently in career development.

### (a) Resource Material

Resource material about business has been requested by teachers and made available by business firms to enrich certain concepts or ideas for which a teacher needed posters or special kits. This was at first a contribution to the educational process and is still done on subjects as varied as films depicting the effects of pollution or the exploration of the moon. In addition, however, these resource materials have become specifically useful in the areas of career education, in guidance and as sources of information about the world of business in general. They range from directories of resources to speakers' bureaus arranged by areas. A report brought out by the Wisconsin State Department of Public Instruction lists these as well as an impressive array of training strategies which introduce businessmen to schools and to students. It is interesting to enumerate the eleven strategies outlined in this Wisconsin district report to see just how broad and varied are the interactions and resources shared by the schools and community. They are as follows:

- providing an in-school visitation day for business people focusing on career education.
- administrator and staff visitations to community employees.
- 3. development of a locally produced slide/tape presentation of career opportunities.
- 4. co-operative development of a community resource directory for use by teachers, administrators and community.

- 5. development of a speakers' bureau.
- 6. development of elementary level career education activities.
- 7. using community resources to provide shadow experiences for high school students.
- 8. co-operative education programs.
- 9. involving parents in career education.
- 10. career days.
- ll. field trips for career awareness and exploration.<sup>4</sup>

  The list is not only extensive but impressive as well. Unfortunately, this is not the norm for all areas of either the United States or Canada. However, some segments of the above interactions are a part of the school-business network in most areas.

## (b) Vocational Training

One of the most visible education and business liaisons has been and to some extent still is in the area of vocational training. The Canadian involvement in vocational training has been dealt with by Lazerson and Dunn who outline its historical roots and question its real value. They claim that "right from the start students placed in occupational categories were those the system was failing" 5. Vocational training appeared to promise much but was soon found wanting. Lazerson and Dunn claim that,

The occupational programmes were designed to prepare people for low prestige, low security, low paying service jobs ...<sup>6</sup>

This questioning of the traditional role of vocational education led Dieling and Hainsworth to examine the traditional stereotypes towards vocational and technical education. They make the point that vocational technical classes were held in dingy basements and rated very low in the educational hierarchy. While this has improved somewhat, their survey

still confirms that academic education is seen by parents, teachers and students to be the domain of the bright and technical education that of the average and low student. This kind of stigma not only prevents vocational and technical training from being improved and redefined, it threatens to rob a whole generation of the technical know-how which is necessary for future survival.

It could encourage a kind of educational snobbery which could leave its graduates, especially those in the academic curriculae, unprepared for the technological age in which they live and for work roles they will later occupy.8

That vocational training in its traditional sense needs improvement is attested to by many researchers. Egginton in "Is Vocational Education Meeting Its Objectives?" found that vocational education students have both a more negative self-image and a negative attitude toward learning than do non-vocational or academic students. He further noted that participation in vocational programs was not effective in changing this attitude. Paul Goodman in Compulsory Miseducation says,

... three weeks of training is sufficient to prepare individuals who have no education whatever for the average job in General Motor's most automated plant. 10

He also maintains that on-the-job training can be done much more quickly and effectively.

In the Army and Navy, fairly complicated skills, e.g. radar operation and repair are taught in a year on the job, often to practical illiterates. 11

Donald J. Wilson makes the point that,

In Ontario, by contrast, students in the Diversified Occupations Course take two years to learn such skills as janitorial service and meat cutting.  $^{12}$ 

Educators are not alone in feeling that vocational training should be reassessed. Wright tested employers who had taken part in a workstudy program to determine their attitudes to hiring and the educational process of the students. Employers expressed comments such as these:

- 1. Students should be offered academic and technical skills.
- 2. They favoured students with good English skills.
- 3. New employees should be trained on the job.
- 4. Students were attitudinally unprepared for the job market.
- 5. Schools failed to turn out students who could cope with the realities of the work world.  $^{13}$

The general consensus among employers was that interaction with business must occur earlier. Lazerson and Dunn claim that "employers have shown little interest in their employees' school skills, assuming that most work related learning takes place on the job", implying that this disinterest results in much frustration among students who find themselves unsuited for what they have supposedly mastered. <sup>14</sup>

Wilson asks that "industry liberate the schools from vocational education so that they can provide both the liberal and technical education our students need." He praises a program at Nova High School in Fort Lauderdale, Florida, where <u>all</u> students learn the intellectual and technical skills needed in an age of technology. 15

On the other hand, Gordon J. Swanson in <u>Vocational Education: Fact</u> or <u>Fantasy</u> makes the point for Vocational Training. He finds on-the-job training a limiting experience for the students.

On-the-job training, on the other hand, has the effect of narrowing the choice to a specific task, to a specific location ... Institutional training accommodates choice-making among occupations, mobility within the occupational structure, and the acquisition of skills necessary for a variety of self-employment roles. 16

He prefers the co-operative kinds of programs which combine school instruction with on-the-job experience. <sup>17</sup> The recommendations by most serious researchers to combine on-the-job experience with in-school instruction has resulted in the many work-study programs shared by

industry and education. In Halifax a "Remuneration Work Experience Program" has been established for the academically low grade nines who were placed one day a week in an industry and were paid the minimum salary by employers. This kind of co-operative venture gained a favourable response both from students and their employers. 18 Another such co-operative work-study program is described by Tehle and Anderson. Again, this program was for pupils having problems in the traditional school setting, but this time for students who were younger (14 and 15). This program focused less on specific job skills and more on experience and appreciation of work and education.  $^{19}$  All too often, these work experience programs, when they deal with vocational aspects, do not reach a wide enough group but deal with the non-academic segments of the school population. The problems and recommendations addressed by the vocational training controversy have, to some extent, been remedied by the more general, more universally accessible programs which schools have called career education.

## (c) <u>Career Development</u>

Career education is the largest area of business and school cooperation because an essential part of career education is exploring the
community in order to observe and prepare for future careers. The problems which affect vocational training such as the changing job market,
leisure, cost, and the inability of schools to keep up to date in terms
of equipment and expertise apply to career education as well. Most
co-operative programs have received glowing responses from all parties
involved - teachers, parents, students and businessmen. One such program
and one which expanded the usual career choices to include professions
such as law, accounting, etc. is described by Joseph A. Naumann in his

article "When the Community Becomes the Teaching Ground". The results of this interaction were an increase in self-confidence, an expanded interest in career and school goals and an edge on the job market. Patricia Toth in "The Classroom Connection" provides an excellent background source for co-operative career planning and would be of interest to anyone implementing such a continuous K-13 developmental program. <sup>21</sup>

While the co-operative ventures in career education are both exciting and effective, they touch only those students already in Secondary or Post-secondary schools. In reviewing the literature one is struck repeatedly by the fact that career education does not go far enough. Students should be prepared in a broader spectrum of economic education and at a much younger age. They should become knowledgeable about careers before they are asked to make a career choice. Furthermore, students should perceive themselves not only as future workers, but see their roles and responsibilities as citizens, community members and consumers of goods and services. To this end, the education they receive should be continuous, developmental and have a broad content base. Dayis E. Dale, in "Economic Education in the Curriculum" advocates that schools enact developmental programs to allow each child to become knowledgeable about the society in which he functions. He maintains that economic units should be student-centered and reflect the three major theories of learning: behavioural, cognitive and humanistic.<sup>22</sup> This kind of program means involvement not only of schools but of community, parents and industry as well.

## Business-Initiated Co-operative Programs

Recognition for public service was and is perhaps the greatest motivation for business involvement in education. Such things as scholarships, funding for special projects or donations to schools have all been reflected in the business community's role toward community service. Samuel M. Burt suggests,

Among the reasons why volunteer service to public education has such universal appeal for industry people are: desire to fulfill a civic responsibility, desire to enhance personal prestige, desire to be known as philanthropic and altruistic and a desire to help youth.<sup>23</sup>

A secondary motive is less a form of benevolent guidance and more one of need. Certainly recruitment played an important part in the beginning co-operative ventures.<sup>24</sup> This took the form of speakers at convocations, company representatives to hand out awards, and professionals to speak to auditoriums of senior high school students on the advantages of business careers.

As time passed, and a certain distance developed between business and education, business felt critical of the educational process and searched for more direct ways to approach students. While schools were making overtures to business for vocational input, for work-study programs and later for help with career guidance, business searched for alternative methods to present their viewpoint. This resulted not only in an expansion and improvement of existing areas of interactions such as those mentioned above, but also in the establishment of out-of-school programs such as Junior Achievement. A document entitled "Community Involvement in Vocational Education" identifies several interesting approaches to minimize the great rift between the world of learning and the domain of work. This article discusses such co-operative ventures as

"Work-experience Programs, Apprenticeship Programs, Licensure Programs, Co-operative Educational Programs, Regional Occupational Centers and Programs, Financial Aid, Intern and Furlough Programs" <sup>25</sup>. The involvement of business in the vocational segment of education alone is quite extensive. Weatherby et al. has traced the different types of business/school interactions in their more general categories in this way:

- co-operation involving an industry and a school or schools.
- consortium between a school system and several businesses.
- 3. industry/education consultative arrangements.
- 4. industry/education performance contracts.
- 5. industry educational regional councils.<sup>26</sup>

An interesting interaction, mentioned by Weatherby and discussed in great detail by Haden and King is performance contracting. It reflects the awareness by business that school is a huge market which can be tapped. In performance contracting, schools hire a team from business to upgrade a specific area of a curriculum, e.g. math. This can involve either new methods or equipment which business has developed and is marketing.<sup>27</sup>

A good source of information on the business point of view and its place in education can be found in Crews' "Curriculum Development in Education" in which he discusses the role of education for business in its historical perspective, its role in career education, its role in the elementary, secondary and college and university levels, as well as the development of Teacher Education Programs. <sup>28</sup>

Career education appears to be an excellent meeting ground between business and education in that both receive from the involvement as much as they give. Schools are happy to be able to illustrate concretely what

types of careers are available and welcome to this end the help which business speakers can give about their personal careers to interested This personal touch adds realism and authenticity not available from any book on the subject. By providing an open-door policy to their plants, factories and offices, business combines their desire for public service involvement, community participation and derives a pleasurable experience in helping the young. One such mutually beneficial program is described by Mumford in "Career Education" which combines the career education needs of Ohio schools, K-12, with the needs and interests of local General Motors' Plants. The document addresses itself to such issues as education and training as they relate to career choice, economics, worker responsibility, employability and work-adjustment skills and development of decision-making skills. Central to this program is the General Motors' support by ventures such as tours or on-site visitations where pupils may go to observe a business at work; shadowing, whereby children are permitted to follow someone through the various stages of his occupational day; and speakers who present students with personal experience about careers.<sup>29</sup>

While business has recently been critical of the educational competence of the students it hires, it has also been willing to help.

Schools, however, have not always looked at business as the helpful partner. Often business was viewed as the not disinterested persuader. Education questioned the validity of the idea of progress and work especially in the sixties when creativity and freedom were the educational catchwords and schools saw themselves as educating for life, not work. Perhaps for this reason, business felt that it needed a forum from which it could reach young people to present to them their views. Junior Achievement was established as an out-of-school venture where students

could learn about business in a practical manner. They established businesses of their own and with the help of prominent area businessmen, learned to operate them, market a product and prepare a statement of profit and loss.  $^{30}$ 

Although business was having an impact in vocational education, career development and through out-of-school programs such as Junior Achievement, it was neglecting to a large-extent the elementary school population. Educators and businessmen realized that choice is based on knowledge and familiarity. Children need to know about business, as they do any subject, long before they have to apply it in their lives. The realization that a more general, more developmental program was needed resulted in the introduction of programs such as the one described by Toth in "The Classroom Connection: A Program Relating the Skills Taught in School to Those Used in the World of Work". This program reflects similar organization, approach and aims as the program under discussion in this study. Research on Project Business, while it has not entered curricula or educational sources, has been quite well documented in the areas where it operated. Dr. Robert N. Fortenberry, former superintendent of Public Schools, Jackson, Mississippi and current National Parent-Teacher Association Vice-President, notes,

It would be unfair to say that schools have been weak in teaching economics to our young people. They obviously can't do it all. Since businessmen often are critical of how business is or is not taught in schools, the program provides the best of both worlds.<sup>32</sup>

That Project Business fits into other Ontario curriculum areas is attested to by a letter from Bette Stephenson, Minister of Education, who states that it relates not only to Career Choice and Exploration but to "Geography, Business Studies, History, Family Studies, Consumer Studies and Mathematics." 33

Businessmen also found the program challenging, interesting and enjoyable. Mr. D. W. Mendham in a letter to Junior Achievement of Windsor, Ontario puts it thus:

I have never in all the community work I have been involved in had more fun and received more satisfaction from a project as I have from Project Business. The Project provides an opportunity for the consultant to view the educational system from within and gain a greater perspective on our teachers and their difficult jobs.  $^{34}$ 

Obviously there is appreciation and understanding developed in the program for each segment of the partnership. This appreciation and relevance can only aid the students who are involved in this co-operative partnership between education and business.

Whether business has initiated school liaisons for reasons of recruitment, public service or to present their viewpoint, the interaction is gaining dividends for both education and business. Business has bridged the gap by going beyond criticism to constructive help through dynamic business initiated programs. In return they receive satisfaction from being involved and furthering the most precious resources a country has - its young people.

# Selected Problems and Directions of Co-operative Programs

The present and future trends in co-operative programs between business and education appear to be heading toward the broad general topic of economic education. One reason for this trend is that the very nature of work is not only changing but is being questioned. Woodring claims that one quarter of our lifetime will be spent on actual career involvements. The emphasis is shifting from career and vocational training toward the more liberal economic concerns which have invaded all sectors of our lives and must be considered more fully in our

education process. Stevenson, in "So Much for the Mind: A Reprieve for Canadian Education" states

Before any acceptable, long range future for Canadian education can be evolved, it is imperative that we establish the extent to which education and individual economic benefits are either related or unrelated.  $^{36}$ 

The separation between work and education discussed by the Education Commission of the States, Denver, Colorado in "Synthesizing Work and Schooling" <sup>37</sup> can no longer be tolerated for a number of reasons. The specialist attitudes have been replaced by more generalist ones. The world is too complex to be explained by one expert. Experts co-operate and compliment each other's area of specialty. T. H. Taylor corroborates this view when he claims

A functioning citizen, whether in the workplace or elsewhere in society now emerging is a generalist who understands a mosaic of relationships.<sup>38</sup>

The emphasis in business education should reflect this "mosaic of relationships" rather than serve vocational or career needs only. The world of work should be related to other areas of societal interactions, such as economics, history, civics, etc. Perhaps the single most important aspect of education in general, and business and technical education in particular, should be the world relevant. A program is relevant if it is continuous in a developmental sense, if it is of meaning beyond the present, and if it relates to other areas of a student's life. This makes interaction between the schools and the business community a very demanding priority. The plea for relevance is made by Walter M. Stein,

The concept that animates the school is that basic knowledge and skills, if they are to become relevant, must be used in everyday life, rather than in artificial classroom situations.<sup>39</sup>

Marshall McLuhan, who has readily been accepted by corporations as a guide and interpreter of future trends but much less so by schools, makes the claim that education must turn to discovery, that children see relevance only in problems which need a solution, not those for which answers have already been found. His analysis explains to some extent the reasons why co-operative, on-the-job education is seen so positively by young people. McLuhan's ideas about "prowling the environment to learn" are reflected directly in the success of field trips, shadowing etc. which many successful co-operative ventures between education and business share.

Newspapers are quick to point out the gaps between education and other areas of society. Bruce Whitestone of The St. Catharines Standard is no different. He makes the point that unless economic education becomes an integral part of the school curricula, society's problems will remain unsolved since those with no economic knowledge become the teachers, judges and lawmakers of our society. Davis E. Dale claims that the need for economic education is no longer a matter for discussion but has been established by many researchers. He advocates integrating economic education with other subjects and training teachers in economic content knowledge. The economic unit should be student-centered and reflect the major theories of learning - behavioural, cognitive and humanistic. 43

Robert Keyes also believes in project based economic education and in the need for teachers to increase their interest and knowledge in economics:

Teachers must have understanding, interest and dedication before our students become concerned, involved and informed citizens.<sup>44</sup>

One of the major problems of adequately training teachers is cost. The cost factor in the educational segment of the partnership is exorbitant. It would be impossible to train teachers or pupils properly in economic education or to provide a proper and convincing reproduction of the technical resources which business already has. It would be equally impossible to duplicate the research facilities and manpower necessary for developmental research in any of the areas of expertise which the world of business controls. This point is made very clear by an article in the Vancouver Sun in which the author claims that the cost of education is threatening to absorb most of the gross national product and that so long as business seeks more and more certification, the educational burden is not likely to diminish. 45 While the idea of education bankrupting the economy is a bit fantastic, the fact that the public expectations as well as the tremendously accelerated knowledge explosion makes it virtually impossible for education to keep pace with other segments of society, does indicate that costs are not likely to diminish in the near future. The inability of education to address the tremendous costs involved in providing economic education and the fact that it can best be addressed through shared programs has led Hoyt to comment that there is absolutely no way that a career education effort can be successful if all the partners, teachers, businessmen, students and parents etc. are not involved. This applies equally so to economic education.

That the teacher is an important part of this partnership is obvious. The teacher must receive help in this endeavour either by instruction as advocated by Mumford with his suggestion of Teachers' In-Service Tours of Industry <sup>47</sup> or Stein's Teacher exchange days in actual industry jobs, <sup>48</sup> or through research help as demonstrated by the unique work of the Far West

Laboratory for Educational Research and Development of San Francisco which helps teachers to locate resource personnel. <sup>49</sup> Even so, teachers alone cannot hope to do the job. It is here that programs such as Project Business can be an invaluable aid both in teacher training and in cost sharing. It is as resource people, as consultant teachers, through field trips and the sharing of personal experiences about their areas of expertise that business participants can enrich and strengthen economic education. Children are ready and willing to hear from someone who works in the "real world", about inflation, regulation or consumerism. School has traditionally been in control of its curriculum and insulated from the outside world. How ready are teachers to open the doors wide to let new methods and ideas in? Can educators be certain that what enters does so with good will and a pure heart? Patricia Toth in "The Classroom Connection" puts this dilemma quite well:

Only if business is there for constructive educational purposes and acts totally in good faith can the project be successful and the credibility of the business be maintained.  $^{50}$ 

Teachers, too, will have to meet businessmen halfway. Many teachers and administrators have "been reluctant to permit lay intrusion into what they regard as their legitimate sphere of expertise". Responsibility is placed on all members of the education community including school principals. Don Dawson in "Emerging Patterns of School-Community Interaction: Issues of Co-operation and Control" sees the principal's role as pivotal in the communication network between school and community. The principal must behave as moderator but not as pawn. He must ensure that interaction occurs but also ensure that it is meaningful to all parties. While co-operation should be encouraged and welcome, it must be evaluated. It is ultimately the responsibility of the principal and

teachers to ensure that children are not short changed. They must ensure quality control in the programs they endorse. They also have a responsibility to adjust to the times and needs of society without sacrificing past standards and future needs. It is a formidable task and any help which they receive in this endeavour which is sincerely given can only be welcome. Project Business appears to respond to most of the directions recommended for co-operative programs. The developers appear to be aware of the teacher's difficult role and are willing to have their program assessed to measure its educational value.

#### Summary of Chapter Two

A search of the literature reveals several areas under which education and business interactions have to some extent been documented. On a general level the types of co-operative ventures in their historic interactions have found some echo in the literature. On a more specific level the most common examples of school programs which focus on or use business expertise are those which relate to school curricula such as vocational training or career education. These interactions can be subdivided under school-initiated ventures and business-initiated ones. Schools use business as sources of funding for special projects as well as to give a concrete focus to their vocational and career programs. Business co-operates with education from a sense of community involvement, a desire to help youth and a desire to effect the education of their future recruits. A third area for fruitful investigation is to be found among authors who advocate the need for programs which go beyond the usual school emphasis such as vocational and career education. They encourage developmental, co-operative programs which address the more general topic of economic education and serve children from the K-12 age group. These

authors suggest that programs be project-based, continuous and relevant. The implementation of this kind of program has often come with the help of business personnel which has approached the school boards. This is partially so, because schools have neither the funds nor the expertise to initiate such programs. Project Business and programs like it, have demonstrated some success in this co-operative teaching endeavour which goes beyond material resources to a sharing of school and education personnel. While this kind of interaction raises some questions of control and perhaps bias for some researchers, it represents the best of both worlds for others. Participants, as well as students, appear to experience rewards beyond those anticipated by the organizers of these programs. This proves that, while such programs should not be accepted without evaluation, they can be effective in introducing value and innovation to educational curricula.

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#### CHAPTER THREE

#### Research Design

#### Introduction

The Project Business treatment began in February 1981 and was concluded in May 1981. The actual interaction between classes and consultants lasted for twelve weeks. A longer time period had been requested. However, it was thought that a time line which would go past the first week of May would coincide with other school activities and many students would not be available to finish the program properly. Since the program was not available earlier, a twelve-week period was the only solution.

#### The Sample Selection

The Lincoln County Board of Education designated four schools which would be involved in the Project Business Program. Two of the schools selected are large senior elementary schools which had enough grade eight classes so that two control and two treatment classes could be selected in each school. Since this population was randomly distributed in each particular grade eight class, and since they shared a common socioeconomic background, schools 1 and 2 were used in this study. School 3 provided two treatment classes. The two classes of School 4 were designated as control. Schools 3 and 4 were not used in this study since the total N was quite large and the socio-economic background of Schools 3 and 4 was not similar to that of Schools 1 and 2. This difference between Schools 1 and 2 and 3 and 4 also showed up on a preliminary analysis of the equivalence of schools on the pretest in the Project Business/OISE/Lincoln County Report. 1

The general area from which schools were selected is a middle class, industrial area where a certain acquaintance with business can be expected since the area residents rely heavily on many industries for employment.

#### Instrumentation

#### Introduction

Five instruments were designed by the research team dealing with the Project Business Program. This researcher had input either in preparation, evaluation or data processing of all five instruments. However, this study focuses only on the knowledge acquisition portion of the instruments. While all five are described in the appendix, only Instrument One - Part A will be dealt with in this study.

#### Preparation

Instrument One - Part A was based on the material in the consultants' and students' manuals. These manuals contain the central concepts which the program purports to teach students. The Project Business Committee was most anxious that they be judged solely on what they taught rather than on attitudes which may have been transmitted. It was their desire to approach students "in good faith" without transmitting bias either for or against business. A section of attitude questions was therefore rejected by committee representatives as being too controversial in nature. Another consideration for rejecting these attitude questions was that not all areas of the Project Business topics were covered by every consultant and it was deemed inappropriate to test attitudes which related to specific areas. Attitude responses to careers were deemed more suitable and became Part B of Instrument One.

Part A of the pre- and post-test, which is the focus of the present investigation, consisted of 25 statements or questions which students

responded to using a multiple-choice format. In the weighted scoring which forms the basis of this study, part marks were given for degrees of correctness from 0-4.

#### Validity

Efforts were made to improve the validity of the instruments used in this study. This was accomplished in the following ways:

- 1. The information was taken from published documents used by both consultants and students.
- 2. The test was set up and revised several times.
- 3. A subjective evaluation by members of the Project Business Committee as support for the face validity of the instruments was performed.

  Discussion with them resulted in a selection of questions and further revision of the test.
- 4. A pilot run of the test was given to a small group of grade eight students at the OISE-Niagara Centre school.
- 5. Weighting of the questions was done by a committee of three and was further evaluated by members of Junior Achievement and the Lincoln County Board of Education.

Taken collectively, the above measures served to strengthen the validity of the instruments used.

#### Research Design

The research design for the present study is outlined in chart form following.

| <u>Groups</u>                        | Pre-Test | Treatment                 | Post-Test                 |
|--------------------------------------|----------|---------------------------|---------------------------|
| Group 1<br>(experimental)<br>N = 112 | 01       | X <sub>1</sub><br>N = 112 | $0_2 	 1$ $N = 107$       |
| Group 2<br>(control)<br>N = 125      | 03       |                           | 0 <sub>4</sub><br>N = 120 |
| Total N = 237                        |          | N = 112                   | N = 227                   |

The pre- and post-test for this study consisted of Part A (Instrument I) and was given to control and experimental groups alike.

#### Procedure

The following represents the sequence of steps taken to complete this research study.

## A. Selection of Schools to be Involved

Selection of schools was done by the Lincoln County Board of Education. Schools were selected in part because of their proximity to the City of St. Catharines in which most Project Business consultants worked, and in part because of their interest in and enthusiasm for this program.

## B. <u>Selection and Designation of Treatment and Control Classes</u>

Each principal of schools 1 and 2 selected two interested, enthusiastic teachers to take part in Project Business and designated their classrooms as treatment classes. At the same time, each principal selected two other grade eight classrooms in his school to act as control. School 3 was chosen as a treatment school with two classes and School 4 provided two control classes.

#### C. Training of Treatment Personnel

Each classroom teacher of the experimental classroom group was matched with a business consultant by the Project Business Committee. A training session with all other matched pairs was arranged. This session consisted of a background introduction to the program and its success in other geographic areas, a description of its aims and an introduction of the key personnel responsible for the St. Catharines program. The qualifications of the consultants, topics they would present, and the duties of each consultant and teacher were also outlined by the Project Business Committee. Further topics for mutual interaction included:

- a discussion of timetable plans and student names
- classroom procedures, discipline and rapport
- teaching versus talking
- observation and discussion of a sample lesson
- arrangements for pre-treatment visits to classrooms by consultants
- arrangements for follow-up time to discuss problems, field trips
   and lesson follow-ups.

A second training session was held two weeks after the first. It lasted for two hours and used the following agenda:

- Review of First Orientation Session
- Review of Planning Session and Class Visitations
- Reporting Procedures
- Planning Sessions
- Junior Achievement Support Services
- Evaluation
- Team Strategy Meeting

The structured interviews in the Board of Education/OISE report deal with this, as well as reaction to the training session in more detail.  $^2$  The reactions of teachers, consultants and researchers were that the training sessions were well organized, competently presented and of value to participants.  $^3$ 

#### D. Administration of Pre-Test

The pre-test was administered by a research officer of OISE - Niagara Centre to ensure that neither teacher, consultant nor the developers of the tests would in any way influence students. Administration of the pre-test was accomplished via a paper and pencil form in a single sitting of approximately thirty minutes. All groups (N = 237) were pre-tested during the week of February 2-6, 1981 by pre-arrangement with each classroom teacher.

#### E. Scoring of Pre-Test

Pre-tests were scored and collated using raw scores by the OISE researcher during the two-week period of February 9-20, 1981.

#### F. Administration of Treatment

Each consultant arranged an appropriate schedule with his teacher co-ordinator during which time he would present his material. Provisions were made for a flexible schedule for both. The consultant taught one hour each week for twelve weeks. He selected his teaching from among these topics: Economics, Canadian Economics, Financial Statements and Banking, The Market System, The Stock Market, Choosing a Career, and Consumerism. Each business topic covered consisted of a three-phase approach, Dialogue, Action and Career Exploration. A further two sessions, apart from the actual classroom presentation, were required by the consultant for preparation and follow-up. Field trips were arranged by the

consultants and conducted by them with each teacher co-ordinator's co-operation. An attempt was made to provide a maximum educational experience for students. Often senior executives took out time to talk to or be interviewed by the class visiting their place of business. Depending upon the individual consultants, discussions with the students prior to a field trip either did or did not take place. At the end of the treatment sessions, certificates and, in some cases, gifts were presented by the consultant to his class.

#### G. Administration of Post-Test

The post-test was also accomplished by paper and pencil means, administered by an OISE researcher for both experimental and control groups (N = 227) during the week of May 11-15, 1981. Except for an additional part D, given to treatment group only, the post-test was identical to the pre-test since the twelve-week treatment time was considered sufficient to ensure that students would not have experienced a possible 'testing' factor due to familiarity of the pre-measure.

#### H. Scoring of Post-Test

Marking and collating of the post-test was done by this researcher. The final N of N = 227 on the post-test was different from the original pre-test (N = 237) because end-of-school athletic competitions caused absenteeism. This was accounted for in determining the percentage scores. For statistical purposes, it was deemed advisable that the raw scores should be weighted in terms of cognitive acquisition. This was done by a committee of three which this researcher chaired. Each part of each question (a-e) received a mark from 0 - 4 depending on the degree of correctness. See Appendix 1.

#### I. Statistical Treatment of the Data

A one-way analysis of variance (ANOVA) was performed on the pre-test means of groups 1 and 2 to establish the case for statistically significant differences between the groups (.05 level).

A further ANOVA was performed on the post-test means in groups 1 and 2 to establish the case for statistical significant differences between the groups (.05 level).

Mean gains from pre- to post-test were computed and compared for both treatment and control groups to establish the case for treatment differences.

## J. Writing of Results

Chapter Four of this study describes the results of this project.

Results are reported by hypotheses as stated in Chapter One.

#### Summary of Chapter Three

Project Business, a co-operative program between business consultants of St. Catharines and the Lincoln County Board of Education, was given to approximately 180 St. Catharines grade eight students. During the evaluation process which followed in such areas as content acquisition, career attitudes, career exploration and perceptions of students, teachers, principals and consultants, a further group of 180 students acted as a control group. Although all five instruments used in the evaluation are described in this chapter (see Appendix 2), only the area of content acquisition (Instrument One) is dealt with directly in this study and involves 112 treatment students and 125 control students (total N = 237).

The twelve-week treatment was administered by selected consultants who used a three-level approach of Action, Dialogue and Career Exploration to explain business concepts from among seven topics in their weekly one-hour sessions. The consultants and their matched teacher co-ordinators, in whose classrooms the teaching occurred, met for two training sessions to discuss such mutual concerns as schedules, classroom routines, and planning of lessons and field trips.

The research design consisted of an experimental and control group which was pre- and post-tested in an effort to determine if Project Business made a significant statistical difference in content learning (p < .05). The procedure section of this chapter lists the sequential steps (A-J) which were followed in the study.

# Footnotes - Chapter Three

- J. R. Bruce Cassie and Bruce N. Knicley, <u>Business and Schools:</u>
   <u>A Partnership in Economic Awareness and Career Planning.</u> OISE,
   <u>Niagara Centre</u>, July 1981. p. 12.
- 2. <u>Ibid</u>. p. 39.
- 3. <u>Ibid</u>. p. 39.

#### CHAPTER FOUR

#### Introduction

For this study only Part A of the Student Information Sheet I, using weighted scores, was used. Eight classes from Schools 1 and 2 were used in the analysis.

Part A of Instrument I, as stated previously, consists of twentyfive content questions which provide a cross-section of the material taught by the Project Business Program.

#### Findings of the Hypotheses

# <u>Hypothesis One $(HO_1)$ - Pre-test</u>

A one-way analysis of variance was run on the pre-test weighted scores to test the similarity between treatment and control classes.

Table I

|                    | Mean  | S.D. | D.F. | F    |
|--------------------|-------|------|------|------|
| Weighted Treatment | 62.53 | 1.49 | 1 74 | 4.00 |
| Weighted Control   | 60.64 | 2.11 | 1,14 | 4.28 |

Table I confirms the pre-test hypothesis  $(\mathrm{HO}_1)$  that there is no significant difference between treatment and control classes. This means that, before treatment, both control and experimental classes share a similar background in business concepts. The average (mean) performance of the experimental group is listed at 62.53, while that of the control group is 60.64. Since the found value of F (4.280) is less than the tabled value (8.86) there is no reason to reject the null hypothesis.

There is no significant statistical difference between the group mean at the time of pre-testing.

# Hypothesis Two $(H0_2)$ - Post-test

A one-way analysis of variance (ANOVA) was run on the post-test weighted scores to establish the case for differences at the time of the post-test.

Table II

|  | Mean           | S.D.         | D.F. | F.     |    |
|--|----------------|--------------|------|--------|----|
| Weighted Treatment<br>(62.53)<br>Weighted Control<br>(60.64) | 66.78<br>62.46 | 1.39<br>1.55 | 1,14 | 34.550 | ** |

\*\* (p < .01)

These results support the rejection of Hypothesis  $\mathrm{H0}_2$  which states that there would be no significant difference in achievement between the post-test scores of the treatment and control groups. Since the found value of F (34.550) was much greater than the tabled value of F (8.86), the case is established for significant differences at the .01 level.

#### Special Note

While a formal one-way analysis of variance (ANOVA) was not conducted on the means of the pre- and post-tests in the experimental and control groups, it is obvious that gains in the experimental group from pre- to post-test (means from 62.53 to 66.78) are much greater than gains in the control group from pre- to post-test (60.64 to 62.46). The difference in the post-test means is attributed to treatment in the experimental group.

# <u>Hypothesis $H0_3$ - General Hypothesis</u>

Since the results indicate that the experimental and control groups started out the same, and the case for significant difference is established in the post-test means, one can state that factors beyond chance are causing the differences at the post-test stage. Since the differences in means are much greater in the experimental group than in the control group, one can attribute the differences to treatment effect. The case is established for retaining the general hypothesis  $(\mathrm{HO}_3)$ . There is significant statistical growth as a result of the Project Business Program which was employed in the experimental group.

#### Discussion of the Hypotheses

The findings demonstrate that the Project Business Program treatment makes a difference with respect to a knowledge acquisition component. When students in a similar sample were compared, those receiving the Project Business Program at the time of post-testing gained significantly more knowledge about business than did those who did not receive the treatment. This is particularly important since the treatment was of short duration (only twelve weeks) and was conducted in one-hour sessions with little or no drill occurring between sessions.

Some pre- to post-test gain was noted among the control group. This can be explained in part by a combination of the maturation of the students from pre- to post-test, and the fact that media coverage of business events in a "company" town could cause a general accumulation of knowledge in this area. A further possible cause of these weak control gains could be the interaction between control and treatment classes of the same school. The Student Information Sheet II, Part D supports this hypothesis because students in the treatment group stated

that they discussed Project Business with their peers. 1

#### Summary of Chapter Three

The data analysis of Part A of the Student Information Sheet I is summarized below:

- 1. Initial sampling of Schools 1 and 2 showed that pre-test means were the same. This formed the basis of fair comparison.
- 2. Post-test means in the fair comparison (1) showed that gains made in knowledge acquisition of those receiving Project Business were approximately twice as high as for those who did not receive it.
- 3. The slight gain made by the control group could be due to maturation, media information or interaction of control and treatment classes in the schools.
- 4. The experimental group gains in the study were approximately twice those of the control group. The case is very firmly established that the Project Business Program makes a significant difference.

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# Footnotes - Chapter Four

J. R. Bruce Cassie and Bruce N. Knicley, <u>Business and Schools:</u>
 <u>A Partnership in Economic Awareness and Career Planning</u>. OISE,
 <u>Niagara Centre</u>, July 1981. p. 47.

#### CHAPTER FIVE

#### Re-Statement of the Problem

This research report describes a quasi-experimental study involving eight classrooms in two senior elementary schools in St. Catharines, Ontario which were pre- and post-tested to determine knowledge acquisition in the area of business related concepts. Group one received structured Project Business Treatment while group two acted as the control group.

#### Main Features of the Method

Five instruments were developed to record growth in such areas as knowledge acquisition, career attitudes and choice, as well as reactions to the program, its pedagogy and methods by students, teachers, principals and consultants. This study concerned itself solely with Part A of Instrument I, which dealt with content acquisition. The sample was restricted to eight classrooms of Schools 1 and 2 which had two randomly assigned control and experimental classes in each school. Pre-testing was done in a single paper and pencil sitting of approximately thirty minutes during the week of February 2-6, 1981. Treatment was administered by a consultant who was matched with a teacher co-ordinator in whose classroom the treatment occurred. The matched teacher/ consultants met for two training sessions to discuss such topics as lesson planning, classroom procedure and discipline, lesson follow-ups and field trip arrangements. The consultant taught the treatment group classes for twelve weeks of approximately one hour each. He used a three-phase approach of Action, Dialogue and Career Exploration on topics chosen from among Economics, Canadian Economy, Financial Statements and

Banking, the Market System, the Stock Market, Consumerism and Careers.

The paper and pencil post-test which, except for a Part D (Instrument II), given to the treatment group only, was identical to the pretest and was administered in a single sitting of approximately one hour during the week of May 11-15, 1981.

A one-way analysis of variance (ANOVA) was done on the weighted scores of both the pre- and post-tests. An inspection was made of the means from pre- to post-tests in both experimental and control groups.

#### Main Findings of the Study

The data analysis of the study to determine content knowledge acquisition after Project Business treatment resulted in the following findings:

An analysis of pre-test results demonstrated that students had a fair knowledge about business concepts and that treatment and control began with no significant statistical differences.

An observation of the pre- to post-test means showed that while the control group gained less knowledge than the treatment group, it did make some gains. This lead to the speculation that possible maturation, media information and peer interaction from the treatment group of the same school could have affected the post-test scores of the control classes.

The major finding of this study is that Project Business does make a difference to the knowledge acquisition of students. Analysis of variance showed that there were significant statistical differences between the post-test means. A visual inspection of the means from preto post-test in the experimental group showed a large gain (compared to the small gain of the control group).

#### Investigator's Conclusions Based Upon the Findings

The fact that pre-test results show a fair knowledge of business concepts indicates both an awareness of and interest in the world of work by grade eight students. This demonstrates that Project Business begins "where students are" and builds upon this foundation, indicating that the grade eight level is an appropriate place in the curriculum for this project.

To further encourage growth and interest in the knowledge acquisition of business concepts, short, objective unit tests to supplement the Project Business materials would provide a control of any concepts not wholly understood and would encourage interest in and consolidation of the unit materials.

To encourage female interest in equal career opportunities, female consultants should be sought. The students did observe females at work during the field trips but consultants as role models would add to the program's effectiveness.

Field trips should be discussed with teachers and students by the consultant prior to and after their occurrence to maximize on their educational value. If possible, at least one field trip should be chosen by the students. They could be encouraged to research and perhaps even arrange the pertinent contacts.

The consultants of Project Business should be encouraged to expand activities which involve the students directly as doers rather than as listeners.

An attempt should be made also to involve teachers more deeply in the process, perhaps in setting unit tests or guiding research.

Parents also should be made aware of the program and be encouraged to observe classes, accompany students on field trips or become involved

in discussions about Project Business.

Above all, the Project Business Committee should be encouraged to expand, to as many classes as possible, this unique and valuable learning opportunity.

## Other Research Arising From This Project

#### Co-operative Programs

This program could serve as a model for co-operative interaction in other areas of the curriculum. The arts, music, environmental studies, could all make use of the community as field trip sites and co-ordinate the student instruction between experts and classroom teachers. This would not only add realism to education but make available community resources often left unused while schools struggle to duplicate them in the classroom. These types of programs are advocated by many futurists, among them William C. Miller who predicts:

At least one-third and possibly one-half of all pupil learning will take place in the community in social service, in work situations or at home. 1

Programs of this nature prepare teachers to become facilitators of learning. Research in this area should devote itself to both organizing co-operative programs and later evaluating them.

#### Affective Domain

It is very important that further research of a statistical nature be conducted in the area of affective learning which occurs during this study. This research should address itself both to a measurement of gains as well as an analysis of what causes them. This will be difficult because research with affective learning is not well defined and because both education and business tend to find the area threatening.

#### Socio-Economic Testing

Research in this area would benefit from an analysis of the differences in gains among students of various socio-economic levels. This would be of interest both in the cognitive and the affective areas.

#### Influence Sources

A study documenting the sources by which students absorb most of their business and career concepts prior to treatment with Project Business would be interesting. Are they influenced by teachers, parents, peers or the media?

#### Teacher Education

This is a fruitful research area. A testing of teachers at all school levels to determine their knowledge of economic concepts would be of particular interest. Specific testing of those involved in teaching business or in advising students as guidance counsellors would be important. Teacher perceptions and abilities to function in environments other than teaching, as could happen in co-operative endeavours, would be another area of investigation. This is important at this time when jobs are scarce and teacher morale is low. A study of our universities should be conducted to determine in what way students are prepared for their future roles in co-operative, community-based interactions. All of these research areas could be of value in guiding and restructuring teacher training in Ontario.

#### Problems |

Co-operative programs, like Project Business, though effective, are not without problems. Some of the most obvious are discussed as follows:

#### Control

In this study, the question of control was carefully addressed.

There was no doubt that control was shared in a co-operative manner.

Teachers were the ultimate authority in the classroom and had input into what was actually said by the consultants. The Project Business

Committee had control over content and to some extent over the evaluation process. Children saw no conflict in roles, going from teacher to consultant easily. However, what was taught was strictly monitored so that no ideological differences between teacher and consultant emerged. Had differences occurred, questions of control could have jeopardized the program. It is a problem which must be kept in mind and guarded against in future team interactions. Careful matching, thorough pre-training and ample time for discussion between the pairs should precede classroom presentation.

#### Teacher Expertise

Teachers, in order to ensure the proper curriculum control, must be knowledgeable. They must be true partners in the process or they will feel dependent on and inferior to consultants. This surfaced to some extent in the present study. Teachers felt that they should be more involved in the process. Pre-training in the business environment would make teachers more expert, more familiar with business and more assured.

#### Cost Factor

The cost factors in this instance have been borne almost entirely by business. This is a tremendous boost for the already overburdened education segment. The program has been designed to be self-sufficient after the initial venture. The question of cost, however, remains a concern for this and especially for other areas of co-operative

involvements, should they be undertaken. Can Project Business continue to obtain donors for the ever-expanding classrooms which would like to receive the program? Will business be able to continue the quality with which it has begun, both in programming, personnel and field trips?

Numbers have already become a problem in Windsor where the demand for the program rose so quickly that it could not be filled. The disappointment of schools which miss out is quite regrettable. This is an issue which business and education will both have to address.

#### Organization

In this project, organization was made extremely easy for the schools. It has been handled entirely by business. They obtained the sponsors, consultants, field trip sites and materials. It is, however, a formidable task, one that would be quite difficult for education to emulate. Organization would be a tremendous task requiring expertise for which teachers are not necessarily trained. It would be of issue should other co-operative programs address new curricular areas.

#### Scheduling

As the curriculum exists at present, scheduling could become a large concern. While it may be easy to make room for one program such as Project Business, making room for other programs similar to it, in the already busy timetable, requires drastic reorganization. Co-operative programs on a large level would require curricular reorganization.

#### Future Implications of Such Ventures

Co-operative ventures of this sort have implications which make them ideal as indicators of future directions for education. They address many of the problems facing our society and offer solutions which are evolutionary yet innovative.

#### Bridging the Gap

As this research has shown, there is a great rift between education and the real world. Education cannot keep pace with the private sectors such as industry and consequently has suffered a demise in prestige and credibility both from the students it serves and the community with which it interacts. Co-operative programs, like Project Business, go a long way in bridging this gap. These interactions encourage appreciation of the teacher's role, of the abilities of their students and of the educational process in general on the part of industry. Teachers learn from the business consultants about specific knowledge and problems faced by them, and about organization of time. Both learn to appreciate the complexities of the other to the mutual benefit of the students they share. For students the program combined education and the real world, encouraged interaction with and understanding of their parents and made education a relevant and fun experience. This kind of program can do much to diminish the alienation which technology and the information explosion encourage in an already segmented society.

#### Life-Long Learning

Education, as predicted by many futurists, will be a life-long, often voluntary affair. The present is already validating their predictions. Retraining of personnel, re-entry to schools for both upgrading and pleasure are the order of the day. A program like Project Business encourages this kind of continuous flexibility. By broadening the knowledge base, children are made aware not only of possible career alternatives, but of educational requirements and sources of support.

#### Teacher Roles

With the coming of computers and sophisticated learning machines, the drill aspects of education will appear redundant. Indeed, education as we know it will change. Will teachers be declared surplus? Machines seldom replace human beings but they do redefine their roles. Teachers are seen by futurists as facilitators, initiators and planners of learning experiences. These future roles will require generalists who are aware of many areas of knowledge in order to plan effective and responsible experiences to answer their students' inquiries. Indeed, they must know enough to lead them to ask meaningful questions. Programs such as Project Business encourage this kind of broad knowledge acquisition and provide teachers with contacts which they can utilize for innovative, relevant curriculum planning.

#### Conclusion

Project Business, as a model of future curriculum direction, bridges many gaps and provides new yet workable ways in which education can be made more responsive to the demands of a technological environment. By utilizing expertise from many community sectors, it encourages a sharing of ideas, expertise and costs. It is a forum for dealing with the inability of any one sector of society to control a person's life and places the responsibility for education, work and life with an integrated co-operative merger of all people of a community. This kind of program can, if developed in other areas of the curriculum, provide the relevance, flexibility and capability which our future demands.

# Footnotes - Chapter Five

 William C. Miller, "What Will The Future Bring For Education?", <u>Phi Delta Kappan</u>, December 1978. p. 288.

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# STUDENT INFORMATION SHEET (PROJECT BUSINESS)

| YOUR SCHOOL:  |        |                |   |
|---------------|--------|----------------|---|
| YOUR TEACHER: |        | YOUR HOME ROOM | #:  |
| YOUR SEX MALE | FEMALE | ·              |   |
| TODAY'S DATE: |        | orten          |   |
|               | •      |                |   |
|               |        |                | CONTRACTOR |

This is <u>not</u> a test. These questions will help us learn what Grade 8 students know about the business world. Questions are divided into Part (A), Part (B) and Part (C).

Read the sample question and the instructions before you begin <u>each</u> section. Work as quickly and carefully as you can.

. 2 .

#### PART A: KNOWING ABOUT BUSINESS

#### Instructions:

Read the sample question below. The questions in  $\underline{Part\ A}$  are similar to this sample question. You are to select the  $\underline{best}$  response to the question and put a check mark (V) beside (a), (b), (c), (d), or (e).

# **SAMPLE QUESTION:**

|  | 1.  | Most people who open a business do so because:                      |
|--|-----|---|
| Here   | (a) | the government tells them they should                               |
|  | (b) | they are unable to enter skilled trades                             |
|  | (c) | they want to buy and sell with other countries                      |
| ٧  | (d) | they wish to earn money by providing a service or selling a product |
| white the light control of the | (e) | they are doing what their parents did                               |

#### PART B: TAKING A STAND

#### Instructions:

Read the sample questions below. The questions in <u>Part B</u> are similar to these sample questions. Select the respons in the column to the right that best describes your thoughts and feelings about each question. Put a check mark (V) in the appropriate column.

| SAMPLE QUESTIONS: |   |   |   | Neutral (Neither<br>Agree or Disagree | Disagree | Strongly Disagree | I Don't Know |
|-------------------|---|---|---|---------------------------------------|----------|-------------------|--------------|
|                   |   | 1 | 2 | 3                                     | 4        | 5                 | Χ            |
| 1.                | Only large businesses provide good service.                 |   |   |                                       | ٧        |                   |              |
| 2.                | Supermarkets give bargain prices                            |   | ٧ |                                       |          |                   |              |
| 3.                | The Government attempts to discourage profit in business.   |   |   |                                       |          | ٧                 |              |
| 4.                | Buying stock on the margin is better than buying "futures". |   |   |                                       |          |                   | ٧            |

Check Here

| <ol> <li>A business person decides to PRODUCE chocolate bars. He or she will need:</li> <li>(a) machinery, workers and money</li> </ol> |
|---|
| (b) materials and methods   |
| (c) management and markets  |
| (d) all of the above  |
| (e) just (a) and (b)  |
| 2. In business a PROFIT is:   |
| (a) the money left after wages and taxes are paid   |
| (b) the money left after rent is paid   |
| (c) the money left after all the costs of the business are paid   |
| (d) the wages paid to the employees   |
| (e) all the money collected from sales  |
| 3. Which LEVELS OF GOVERNMENT are involved in the regulation and control of business?   |
| (a) federal   |
| (b) provincial  |
| (c) municipal and regional  |
| (d) all of the above  |
| (e) none of the above   |
| 4. In the CANADIAN ECONOMY, decisions are shared by:  |
| (a) consumers and government  |
| (b) producers and consumers   |
| (c) producers only  |
| (d) producers and government  |
| (e) producers, consumers and government   |
| 5. The GOVERNMENT RAISES MONEY for its programs from:   |
| (a) commissions paid by companies   |
| (b) taxes on corporations and businesses  |
| (c) taxes on income, property and sales paid by individuals   |
| (d) all of the above  |
| (a) both (b) and (c)  |

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| her  |       | , E,  | 70.       |
|--|-------|---|-----------|
| 6.   | A DEF | ICIT in government finances occurs when:                          |           |
|  | _ (a) | the government spends more than it takes in through taxes, etc.   |           |
| Andrews and Annual   | _ (b) | the government spends a great deal on one industry                |           |
| drigogico Militarios (   | _ (c) | the government reduces the national debt                          |           |
| emateur etter greek  | _ (d) | the government tries to check inflation                           |           |
|  | _ (e) | none of the above   |           |
| 7.   | Which | of the following is NOT an ECONOMIC INDICATOR:                    |           |
| -  | _ (a) | gross national product  |           |
|  | _ (b) | retail sales and personal income                                  |           |
| **********   | _ (c) | industrial production and rate of unemployment                    |           |
| ***************************************  | _ (d) | a favourable consumer price index                                 |           |
| -  | _ (e) | the postal rates and the price of gasoline                        |           |
| 8.   | In a  | free market system, COMPETITION should:                           |           |
|  | _ (a) | provide more and better products at reasonable prices             |           |
| **************************************   | _ (b) | force people to pay too much for a product                        |           |
|  | _ (c) | regulate how much people buy                                      |           |
| whitesticity is called   | _ (d) | stop the government from taxing businesses                        |           |
| und benefit to the second  | _ (e) | regulate how much people spend                                    |           |
| 9.   | DEMAN | D is:   |           |
|  | _ (a) | the willingness of consumers to buy products or services          |           |
| commenced when   | _ (b) | the desire which consumers express for a product                  |           |
| ,, <u></u>   | _ (c) | purchasing more of an item at a low price, less of an item at a h | igh price |
| parameter de la constitución de la | _ (d) | all of the above  |           |
|  | _ (e) | none of the above   |           |
| 10.  | The   | GOVERNMENT can CONTROL business by:                               |           |
| No. of Street, Street, or other Persons  | _ (a) | putting poor businessmen and businesswomen out of work            |           |
| ***************************************  | _ (b) | closing restaurants that are not clean                            |           |
|  | _ (c) | freezing prices and wages   |           |

(d) advertising government programs to assist businesses

\_\_\_\_ (e) changing the Minister of Consumer and Corporate Affairs

he.k

| 11.  |       | UMERS buy more at a lower price because: more people can afford to buy at a lower price    |
|--|-------|--|
| ***********  | (b)   | lower price goods are better   |
|  | (c)   | the more of an item one buys, the more important that person becomes                       |
| ******************   | (d)   | consumers can resell these for a profit  |
|  | (e)   | none of the above  |
| 12.  | MONE  | / is:  |
| -magain dalamana assaria   |       | a means of exchanging what we own for goods and services which we wish to purchase         |
| *******  | (b)   | a mutual commodity which has the same face value to all parties                            |
|  | (c)   | a replacement for the barter system  |
|  | (d)   | an easier method of trade  |
|  | (e)   | all of the above   |
| 13.  | MONE  | ORIGINATES from:   |
|  | (a)   | The Royal Canadian Mint which makes coins  |
|  | (b)   | a bank in South America  |
|  | (c)   | the Canadian Banknote Company which prints currency  |
|  | (d)   | both (a) and (b)   |
| and the second seco   | (e)   | both (a) and (c)   |
| 14.  | The S | BANK OF CANADA promotes ECONOMIC WELFARE by:   |
|  | (a)   | controlling currency, issuing bonds, fixing interest charges, and keeping money in reserve |
|  | (b)   | speculating in the market  |
|  | (c)   | following directions from England  |
|  | (d)   | following American government practices as to how much money it prints                     |
| and the state of t | (e)   | none of the above  |
| 15.  | A BA  | NK provides the following services to its customers:                                       |
|  | (a)   | investing money in order to pay interest on deposits                                       |
|  | (b)   | safeguarding their money, and protecting their valuables                                   |
|  | (c)   | issuing travellers' cheques and other forms of money                                       |
| ***************  | (d)   | all of the above   |
|  | (e)   | all of the above except (a)  |

|  | . 7 .  | 72. |
|--|--|-----|
| Check<br>Here  |  |     |
| 16.  | A BALANCE SHEET shows a company's financial position at a given time. consists of: | It  |
| n opening  | (a) assets and liabilities   |     |
| stead displacement   | (b) assets plus liabilities plus owner's equity                                    |     |
| nhamidiga. In <sup>a</sup> ddis-deniga, anton  | (c) owner's equity minus liabilities   |     |
| AND THE PROPERTY OF THE PARTY O | (d) assets which equal owner's equity and liabilities                              |     |
| an wayana wake   | (e) none of the above  |     |
| 17.  | A PROFIT or LOSS STATEMENT consists of:  (a) income of the company or business     |     |
| Con-Exp. ModReto app   | (b) expenses of the company or business  |     |
| AND PROFESSION OF  | (c) fines and parking tickets  |     |
| and frequent backs, and represent  | (d) the result of a company's operations for a particular period                   |     |
| entalis establis   | (e) none of the above  |     |
| 18.  | The term ASSET means:  (a) everything of value a person owns                       |     |
|  | (b) the bad debts a company has  |     |
| And Andrew Street on London  | (c) everything of value a business owns  |     |
| A-MANUELLA, MANUELLA   | (d) only (b) and (c)   |     |
| ***************************************  | (e) only (a) and (c)   |     |
|  | If the company is a CORPORATION, the owners are called:  (a) corporate citizens    |     |
| animical laudidación.  | (b) investors  |     |
| ***************************************  | (c) shareholders   |     |
|  | (d) presidents   |     |
| friterstature to medicature  | (e) all of the above   |     |
| 20.  | The RETURN on an INVESTMENT is called a:  (a) share                                |     |
| in magnines de Agentiga Minterglau   | (b) pay cheque   |     |
|  |  |     |

\_\_\_ (c) bonus
\_\_\_ (d) dividend
\_\_\_ (e) expense

|   |       | UMER CHOICE may be INFLUENCED by: advertising                                    |
|---|-------|--|
|   | (b)   | price of the product   |
| war of a little Children  | (c)   | what others buy  |
| ومنطوع ومرسو  | (d)   | availability of the product  |
| الكام والخامة بالكام والما  | (e)   | all of the above   |
|   |       | RTISING can:<br>save you money   |
| In Personal State of | (b)   | introduce new products   |
| <del>t frequence sup</del> t  | (c)   | inform you about products  |
|   | (d)   | help you make up your mind   |
|   | (e)   | all the above  |
|   |       | QUALITIES EMPLOYERS SEEK in EMPLOYEES are: wealth and good looks                 |
| 26.4844 <del>  1</del> 4.486.44   | (b)   | resourcefulness, capability and punctuality                                      |
|   | (c)   | friendliness and new clothes   |
| <del></del>   | _ (d) | belonging to many clubs and playing sports                                       |
| ergi <del>nilas id</del> as <del>idas</del> iyes  | (e)   | owning a car and reading books   |
|   | _ (a) | MPLOYER should provide: equal opportunity employment and safe working conditions |
| angles (children)   |       | parties at Christmas and Easter  |
|   |       | assistance to new workers  |
|   |       | bonuses for top employees  |
| nder i Ridden de Medicie i esta   | _ (e) | a hot meal at noon   |
| 25.   |       | PPLICATION FORM INCLUDES: your education and hobbies                             |
| riet S <b>S</b>   | (b)   | your qualification and work history  |
|   | (c)   | your mother's occupation   |
| <del>n i din din bina ka</del> n  | (d)   | what you expect to be paid   |
|   | (0)   | both (a) and (b) above   |

. 9 .

|     | . 9 .   | R   | e  | 1                                     | ĕ                                    | ŧ                 |  |
|-----|---|---|--|---------------------------------------|--------------------------------------|-------------------|--|
|     |   | Strongly Agree  | Agree  | Neutral (Neither<br>Agree or Disagree | Disagree                             | Strongly Disagree | I Don't Know   |
|     | . Many people find their occupation boring and unpleasant.                                    |   |  |                                       |                                      |                   |  |
| 2   | I am uncertain about the career I wish to enter.  |   |  |                                       |                                      |                   |  |
| 3   | I frequently change my thinking about what career(s) I will enter when I am older.            |   |  |                                       |                                      |                   |  |
| 4.  | I need more information about the educational requirements of my career choice(s).            |   |  |                                       |                                      |                   |  |
| 5.  | Career choice is largely accidental so why waste time thinking about it?                      |   |  |                                       |                                      |                   |  |
| 6.  | Most people have only one occupation in a lifetime.   |   |  |                                       |                                      |                   |  |
| 7.  | Most females have a career for at least ten years.  |   |  |                                       |                                      |                   |  |
| 8.  | Plant tours and listening to speakers representing careers is valuable in my career planning. |   |  |                                       |                                      |                   |  |
| 9.  | Secondary school subjects should be chosen with a career direction in mind.                   |   |  |                                       |                                      |                   |  |
| 10. | By the end of Grade 10, a student should have selected an occupation.                         |   |  |                                       |                                      |                   |  |
| , . | The most important part of an occupation is the money a worker is paid.                       |   |  |                                       |                                      |                   |  |
| 12. | To make a good career choice, a person should know a lot about himself or herself.            |   | and the second second  |                                       |                                      |                   | Name of the last o |
| 13. | My parents (guardians) assist me with my educational and career planning.                     |   |  |                                       |                                      |                   |  |
| 14. | My teachers/counsellor assist me with my educational and career planning.                     |   |  |                                       |                                      |                   |  |
| 15. | My friends assist me with my educational and career planning.                                 | Received the Section of the Section |  |                                       | POLITICA PARTICIPATION OF SECURITIES |                   | Printer containing the contract of the contrac |
|     |   | في أنتظال فعلياتهم  | entrante de la constantina della constantina del |                                       |                                      | فالأمران الموري   |  |

#### PART C: CAREER EXPLORATION

#### Instructions:

The following are career areas in which most people are employed. These also may be career areas which you would like to explore.

Please indicate below your three (3) strongest career interests by putting a 1 (first choice), 2 (second choice) and 3 (third choice) beside the <a href="three">three</a> career areas that interest you.

| CAREER AREA  | YOUR CHOICE (1st, 2nd, 3rd)  |
|--|--|
| Agriculture  | or v   |
| Armed Forces and Police  |  |
| Art  |  |
| Banking  |  |
| Business and Management  |  |
| Clerical and Office  |  |
| Communications   |  |
| Computers  |  |
| Construction Trades  |  |
| Engineering  |  |
| Factory and Heavy Industry   |  |
| Health and Medicine  |  |
| Insurance and Real Estate  |  |
| Mathematics and Sciences   |  |
| Metals and Mining  |  |
| Music and Entertainment  |  |
| Personal Service (Barbering, etc.)   |  |
| Recreation and Sports  |  |
| Restaurant and Hotel   |  |
| Sales and Promotion  |  |
| Skilled Trades   |  |
| Social Services (Helping People)   |  |
| Teaching   |  |
| Transportation   |  |
| Others - Name them   |  |
|  |  |
|  | The state of the s |
| particular language and production of the state of the st | the district white the contract of the contrac |



# STUDENT INFORMATION SHEET (PROJECT BUSINESS)

|       | •        |  |  |  |             |      |      |    |  |
|-------|----------|--|--|--|-------------|------|------|----|--|
| YOUR  | SCHOOL:  |  | handigi A Millian Angalong janga kali di sayang hangana daga | is disease ago en la verilla o messa sua distalma desca distributiva in con-   | -           |      |      |    |  |
| YOUR  | TEACHER: |  |  |  | YOUR        | HOME | ROOM | #: | water the state of |
| YOUR  | SEX MALE | the conflict of the Annie Strate Strate Strate or the conflict of the conflict | FEMALE _   | the Country was the pulse of the Country of the Cou | <del></del> |      |      |    |  |
| TODAY | 'S DATE: |  |  | negati dan eta adika ada ada ada ada ada ada ada eta eta eta eta eta eta eta eta eta et  | nde.        |      |      |    |  |
|       |          |  |  |  |             |      |      |    |  |

| PART D | <b>;</b>  |
|--------|---|
| 1 (a)  | What I liked best about Project Business was:   |
|        |   |
| (b)    | Project Business was <u>important</u> to me because:  |
|        |   |
| (c)    | Project Business would be even better if the following changes were made .  |
|        |   |
| 2.     | Since Project Business began, my impressions of the business world and business personnel have changed in these ways: |
|        |   |
| 3. (a) | I liked my Project Business Consultant because:   |
|        |   |

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| 3. (b) | He or she could be even better if he or she:            |  |            |             |            |                                      |  |  |  |  |
|--------|---|--|------------|-------------|------------|--------------------------------------|--|--|--|--|
|        |   |  |            |             |            |                                      |  |  |  |  |
| 4.     | I would rate Project Busines                            | s as: (C   | Check one) |             |            | <u>navanguna kurung diplomph dip</u> |  |  |  |  |
|        | Poor  | What was the second the second to the second | Very       | Good        |            |                                      |  |  |  |  |
|        | Fair  | an we resource and a second  | Exce       | llent       |            |                                      |  |  |  |  |
|        | Good  |  |            |             |            |                                      |  |  |  |  |
| 5. (a) | The length of Project Busine too long                   |  |            |             | out right  |                                      |  |  |  |  |
| (b)    | I feel the number of Projectabout right                 |  |            |             |            | ne)                                  |  |  |  |  |
| 6. (a) | I feel the student workbook                             | was: (Ch   | eck one)   |             |            | ent                                  |  |  |  |  |
| (b)    | I feel the field trips were:                            | -  |            | loog        | excel      | lent                                 |  |  |  |  |
| 7.     | After the lessons in Pnoject with: (Check one for each) | Business   | , I discu  | ssed Projec | t Business |                                      |  |  |  |  |
|        |   | Never  | Seldom     | Sometimes   | Often      | 1                                    |  |  |  |  |
|        | my classmates   |  |            |             |            | 1                                    |  |  |  |  |
|        | my teacher  |  |            |             |            | Ţ                                    |  |  |  |  |
|        | my parents  |  |            |             |            | Î                                    |  |  |  |  |
|        | others  |  |            |             |            | 1                                    |  |  |  |  |

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| 8.  | During Project Business lessons, my class spent a <u>lot</u> of time: (Check three answers) |  |  |  |  |  |
|-----|---|--|--|--|--|--|
|     | writing answers to questions  |  |  |  |  |  |
|     | having class discussions  |  |  |  |  |  |
|     | answering the consultant's questions  |  |  |  |  |  |
|     | working in small groups   |  |  |  |  |  |
|     | taking notes  |  |  |  |  |  |
|     | completing assignments  |  |  |  |  |  |
|     | daydreaming   |  |  |  |  |  |
| 9.  | Difficulties I experienced in Project Business include: (Check as many as you wish)         |  |  |  |  |  |
|     | understanding the material  |  |  |  |  |  |
|     | taking part in class discussions  |  |  |  |  |  |
|     | working in small groups   |  |  |  |  |  |
|     | explaining to the consultant what was confusing me  |  |  |  |  |  |
|     | asking questions  |  |  |  |  |  |
|     | remembering what I learned  |  |  |  |  |  |
|     | reading diagrams and charts   |  |  |  |  |  |
| 10. | I learned the most in this project when I (Check three answers)                             |  |  |  |  |  |
|     | read the materials  |  |  |  |  |  |
|     | listened to the ideas of other students   |  |  |  |  |  |
|     | talked about my ideas   |  |  |  |  |  |
|     | listened to the consultant  |  |  |  |  |  |
|     | went on field trips   |  |  |  |  |  |
|     | asked questions   |  |  |  |  |  |
|     | did the written exercises   |  |  |  |  |  |
|     | answered questions  |  |  |  |  |  |

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## 11. Project Business was/is:

| Interesting                    |   |  |   |   |   |  |
|--------------------------------|---|--|---|---|---|--|
|                                | 1                                       | 2                                      | 3 | 4 | 5 |  |
| Important to me                | 1                                       | 2                                      | 3 | 4 | 5 |  |
|                                | i                                       | 2                                      | 3 | 4 | כ |  |
| Easy to understand             | 1                                       | 2                                      | 3 | 4 | 5 |  |
| Related to the real world      |   |  |   |   |   |  |
|                                | 7                                       | 2                                      | 3 | 4 | 5 |  |
| Related to my life             | 1                                       |  |   |   |   |  |
|                                | i                                       | 2                                      | 3 | 4 | 5 |  |
| Related to some school subject |   |  |   |   |   |  |
|                                | 7                                       | 2                                      | 3 | 4 | 5 |  |
| Boring                         | *************************************** | ······································ |   |   |   |  |
|                                | 7                                       | 2                                      | 3 | 4 | 5 |  |
| Not important to me            | 1                                       | 2                                      | 3 | 4 | 5 |  |
|                                |   | -                                      | 3 | 7 | J |  |
| Hard to understand             | 7                                       | 2                                      | 3 | 4 | 5 |  |
|                                | •                                       | <b>544</b>                             | J | • | J |  |
| Not related to the real world  |   |  |   |   |   |  |
|                                | 1                                       | 2                                      | 3 | 4 | 5 |  |
| Not related to                 |   |  |   |   |   |  |
| my life                        | 1                                       | 2                                      | 3 | 4 | 5 |  |
| Not related to                 |   |  |   |   |   |  |
| some school                    |   |  |   |   |   |  |
| subject                        | 1                                       | 2                                      | 3 | 4 | 5 |  |

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| 12. | I would recommend Project Business be extended to Grade 8 students in other schools. |   |
|-----|--|---|
|     |  | Yes No  |
|     | (b)  | Please include here any thoughts or feelings about Project Business that you wish to share. |
|     |  | •   |
|     |  |   |
|     |  |   |
|     |  |   |
|     |  |   |
|     | · •  |   |
|     |  |   |

#### APPENDIX 2

#### Description of Research Instruments

The five instruments designed by the research committee are described in detail below.

#### Student Information Sheet (Part A-C)

This constituted the pre-test for control and treatment classes. It is a paper and pencil test which is based on the Instructor's Manual and the Students' Workbook. It consists of three parts:

- Part A has twenty-five content questions of a multiple-choice nature
- Part B consists of fifteen questions on educational and career attitudes
- Part C is a list of career opportunities from which students were asked to select their first, second and third choices

#### 2. Student Information Sheet (Part D)

Part D, which was in part multiple choice and in part open-ended, asked students to respond to their consultants, the program, its process and pedagogy. Part D was given along with Student Information Sheet I to the experimental group. These two Sheets constituted the post-test for experimental group. Sheet I only was used as post-test for the control group.

#### 3. Principals' Structured Interview

## 4. <u>Consultants' Structured Interview</u>

### 5. Teachers' Structured Interview

These three instruments asked participants to respond to such issues as time, planning, effectiveness of program, students and the value of the co-operative effort. These responses were collated from interviews with individual participants by Mr. B. Knicley of the Lincoln County Board of Education.

For an overview of these instruments see Summary of Research Methodology Chart, Appendix 3.

## A SUMMARY OF THE RESEARCH METHODOLOGY

|         | REQUIRED INFORMATION                     | INSTRUMENT USED TO COLLECT INFORMATION | TYPE OF INFORMATION | TREATMENT OF INFORMATION              |
|---------|--|--|---------------------|---------------------------------------|
| 1.<br>* | Student Knowledge                        | Student Information<br>Sheet Part A    | Statistical         | Inferential, descriptive, statistical |
|         | Student Attitudes                        | Part B                                 | Statistical         | Descriptive statistics                |
|         | Student Career<br>Exploration            | . Part C                               | Anecdotal           | Anecdotal Summary                     |
| 2.      | Student Reactions to<br>Project Business | Student Information<br>Sheet Part D    | Anecdotal           | Anecdotal Summary                     |
| 3.      | Principals' Perceptions                  | Structured Interview                   | Anecdotal           | Anecdotal Summary                     |
| 4.      | Teachers' Perceptions                    | Structured Interview                   | Anecdotal           | Anecdotal Summary                     |
| 5.      | Consultants' Perceptions                 | Structured Interview                   | Anecdotal           | Anecdotal Summary                     |

<sup>\*</sup> Part A only of relevance to this study.