

## VENTURES LAUNCHED AFTER ENTREPRENEURIAL EDUCATION EMPLOYMENT AND INCOME EFFECTS

**William C. Wedley**  
**Robert G. Wyckham**  
Simon Fraser University

### ABSTRACT

*Graduates of a New Enterprise Program were tracked to find out what they did with their business plans. Of 73 graduates, 58 launched new ventures. Fifty six of these new ventures produced 225 new jobs, and 29 of them produced an incremental value added of \$6.3 million. Including the multiplier effect, the total economic benefits are over 338 jobs and \$10.8 million value added. Younger candidates not employed by large businesses with completely new ventures past the pre-startup stage are more likely to launch ventures. However, it is the more experienced candidates analyzing the project for their employers who are likely to produce greater employment and wealth.*

### INTRODUCTION

The opportunity to be involved with the launching of new enterprises has been a major factor motivating governments and academic institutions to organize entrepreneurial education programs. Based upon the premise that smaller, entrepreneurial firms are the ones that provide the bulk of new employment and income to society, many organizations, both public and private, have invested resources in educating aspiring entrepreneurs (McMullan, 1988). Yet, many of these investments are based upon faith that encouragement of entrepreneurship is a worthwhile endeavor. Very little research has been done on whether the investments actually yield economic returns.

Some scholarly research suggests that there may be a positive return to such effort (Clark, Davis & Harish, 1984; Hornaday & Vesper, 1982; McMullan, 1988; Watkins & Morris, 1981; Wyckham & Wedley, 1989). This article adds to that body of research. It reports on a study of ventures launched by participants who took Simon Fraser University's New Enterprise Program (NEP) between 1985 and 1988. A previous study of these graduates reported on factors related to venture feasibility analysis and business plan preparation (Wyckham & Wedley, 1990). This article undertakes a more intensive analysis by concentrating on those graduates who took their plans and went on to launch ventures. It examines demographic, vocation, and venture factors associated with new enterprise launches and the employment and value added by these enterprises.

---

In conducting the investigation, two main research questions were addressed:

1. Are there characteristics of entrepreneurs and their ventures which distinguish those proposals which are launched and those which are terminated prior to startup?
2. Of those ventures launched, are there traits of entrepreneurs and features of their enterprises which are associated with larger amounts of employment and value added?<sup>1</sup>

## **THE LITERATURE**

A review of the literature on entrepreneurship courses indicates that the experience from such courses can have a number of positive outcomes. As shown by Hornaday and Vesper (1982) and Clark et al. (1984), the first of these outcomes is a participant's choice of a more entrepreneurial career. Second, the perceptions of preparedness to be an entrepreneur may be affected by graduation from a business school (Knight, 1987). Thus, even if participants had chosen their vocation prior to embarking on a course, there is a likelihood that their confidence to be an entrepreneur will be enhanced. Third, entrepreneurship education encourages participants to undertake venture feasibility analysis and business planning (Wyckham & Wedley, 1990).

Although Dimick (1986) did not find an association between entrepreneurship course participation and the eventual launching of new ventures, a number of other researchers have identified this relationship (Clark et al., 1984; Conner, 1985; Hornaday & Vesper, 1982; Watkins & Morris, 1981). There has also been some evidence that entrepreneurial programs improve the performance of new ventures. For example, Long and Ohtani (1988) found that a course which brought together aspiring and practicing entrepreneurs resulted in better returns. Also, the cost of long term counseling by Small Business Development Centers was found to have been more than offset by increased taxes paid by clients (Gatewood & Hoy, 1987). Finally, entrepreneurship course participation was one of the factors found to be related to higher levels of new venture spinoffs from universities (McMullan & Vesper, 1987).

## **THE NEW ENTERPRISE PROGRAM**

The NEP is an entrepreneurship education program designed for current and aspiring entrepreneurs, research and development professionals, and managers of new product development. Ninety-seven participants completed the program between the spring of 1985 and the spring of 1988.

Being a community-oriented course, the New Enterprise Program appeals to entrepreneurs who have innovative new venture projects in mind. The objective of the program is to assist participants to conduct venture feasibility analyses and to develop business plans.

Designed to be compatible with the busy schedules of entrepreneurs, the NEP begins with three full-days of seminars which encompass a weekend. These initial seminars provide an overview of entrepreneurial characteristics, the start-up decision, mission definition, industry and market analysis, the business planning process, the entrepreneurial team, controlling the business, government services and requirements, financing options, and business strategy.

---

Approximately ten days after the weekend seminars, the participants begin six weekly sessions which provide greater detail and give direction in feasibility analysis and the preparation of a business plan. These afternoon/evening sessions last six hours and include a dinner hour where participants are allowed to socialize and exchange information. The weekly topics include (a) market opportunity analysis, (b) marketing strategies, (c) financial planning and evaluation, (d) operations planning and (e) the management team. The final session accentuates the future tasks which the entrepreneur will have to undertake.

Each component of the program facilitates the step-by-step preparation of feasibility analyses and business plans. The course is very experiential. Case studies are used, examples are drawn from the participants' projects and experiences, and each participant prepares assignments on his/her own project. Instructors (professors and consultants) and participants provide weekly feedback on each project. Each entrepreneur is assigned a mentor from the business community who provides one-on-one assistance.

Final business plans are due two weeks after the end of the formal sessions. Completed plans are evaluated by a panel of financial practitioners, and awards of excellence are presented for the best new venture plans.

## RESEARCH METHODOLOGY

The population from which the sample was selected was composed of all 97 graduates of the NEP. Graduates were sent a questionnaire by mail and then telephoned for their responses. Eighty-six completed questionnaires were obtained (89% of the population).

### Sample Data

The data for this study come from the 86 course respondents. A special subset of these people, those who had been out of the program long enough (one year) to launch their ventures, was also examined. Seventy-three participants fell into this category, and 58 of them had actually started their ventures.

These 58 venturers were asked to provide information on the operation of their enterprise from its time of inception to 1988. Data requested consisted of gross sales, cost of goods sold, number of employees, wages paid, and amounts of equity and debt. All figures were to be for the specific ventures launched subsequent to the New Enterprise Program and to be incremental to any other business.

These data were gathered to provide a comparison between those who launch and do not launch their projects. Furthermore, employment and value-added information was gathered to determine which factors are associated with increased benefits to the economy.

### Characteristics of the Sample

Two thirds of all of the sample members were sole owners or partners in a small business venture at the time they entered the NEP; 15% were employees of small companies; 17% worked for larger companies; and 3% were not employed. Forty-six percent of respondents' ventures were at the pre-start up stage (concept established and perhaps some preliminary

---

analysis done); 23% were at the prototype stage (prototype in hand, some testing done, perhaps some initial market testing done); and 31% were at the post-start up stage (product or service in hand and launched into the market place).

Forty-eight percent of the venturers were launching an entirely new product or service into a new market; 36% were presenting a refinement of an existing product or service to an existing market; 11% were introducing a new product or service into a market in which they were currently selling; and 6% were attempting to market a currently sold product or service into a new geographic area through a new channel of distribution or to a new end-user.

One third of the NEP graduates were evaluating a project for themselves with the intention of starting a new company. Fifty percent were analyzing a venture for an existing company of which they were the sole owner or a partner; and 17% were examining a venture concept for their employer.

Three quarters of the respondents had had at least some experience in the industry into which they were launching their enterprise. Thirty-three percent had ten or more years of experience in that industry; the median was five years of industry-related experience.

### Feasibility Determination and Business Plan Preparation

Ninety percent of the sample members who had been out of the program at least a year said they were able to determine the feasibility of their ventures (see Table 1). Seventy-nine percent of those who concluded that their project was feasible said the NEP helped them to determine feasibility. All of the fourteen graduates who decided that their project was not viable said that the program had assisted them in coming to that conclusion. An earlier paper reported that ventures identified as infeasible were associated with projects at the pre-startup stage and involved services rather than products; feasible projects, on the other hand, tended to be associated with participants who were evaluating a project for themselves, who had greater management experience and who were employed by a large firm.

Seventy-six percent of the NEP respondents reported completing their business plans. In the above-identified study it was found that business plan completers were more likely to fit the following profile: not evaluating the venture for an employer, working for a small business, examining a project aimed at the local market, analyzing a product rather than a service, the sole owner of their business; and younger (Wyckham & Wedley, 1990). In the current study we analyze those who actually launch a venture.

## RESULTS

### New Venture Launches

Of those who had been out of the program for at least a year, 29% had gone ahead with the venture that they had in mind when they entered the NEP. Another 30% proceeded with a variation of that venture. Forty-two percent had abandoned their NEP project, but half of those had proceeded with another venture. Only 21% of the responding participants did not launch a venture (see Table 1). Given the number of candidates who varied their project or changed to a new project during the course of the program, it seems likely that the NEP had some influence on the type of ventures launched.

**Table 1***Venture Feasibility and Outcome*

Outcome	Feasibility							
	Feasible		Not feasible		Did not decide		Total	
	#	%	#	%	#	%	#	%
Launched venture	18	34	0	0	3	43	21	29
Launched variation	17	32	3	23	2	29	22	30
Launched different one	8	15	6	46	1	14	15	21
Did not launch	10	19	4	31	1	14	15	21
	53	100	13	100	7	100	73	100
Total		73%		18%		10%		100%

$\chi^2 = 14.8$ ,  $p = .02$ , but 8 of 10 cells have expected frequencies  $< 5$ .

**Factors Related to New Venture Launches**

The factors which identify those participants most likely to launch a venture were determined by a discriminant analysis of the respondents who had been out of the program for at least six months. Wilks' step-wise method with a maximum of four steps was used. The results are presented in Table 2.

**Table 2***Discriminant Equation - Launched vs. Non-Launched Ventures*

Variable entered <sup>a</sup>	Standardized discriminant coefficients	F-value	Correlation with final discriminant function
1. Pre-startup stage of development	.902	15.9**	.578
2. Employed by large business	.597	7.6**	.499
3. Type of venture	-.543	4.9**	-.116
4. Age of participant	.433	3.6**	.271
Wilks' Lambda = .6886	$\chi^2 = 23.4$	Significance = .0001	
Eigenvalue = .45			

Group Centroids: Launched Venture = -0.309

Non Launched Venture = 1.418

Statistically significant\*\* (p < .01).

<sup>a</sup> Stage of development: 1 = pre-start-up; 2 = prototype and testing; 3 = post-start-up.

Employed by large bus.: 1 = Employed by a large business at time of entry into program. 0 = other

Type of venture: 0 = refinement of an existing product or service; 1 = completely new idea.

Age of participant: Age of participant at the start of the program.

The discriminant equation indicates the following:

1. When they entered the New Enterprise Program, those participants who were at the pre-start up stage in the development of their project (as opposed to the prototype or post-start up stage) were less likely to launch their venture.

2. Those employed by a large business were less likely to launch than those employed by small firms and those who owned their own business.

---

3. Those evaluating a completely new venture (as opposed to a refinement, a launch of an established product into a new market, or a new product in an old market) were more likely to go ahead.

4. Older participants were less likely to launch than younger participants.

The statistical significance for the discriminant equation ( $p < .0001$ ) indicates that the launched and non-launched projects, as described by the four variables, are very different. This fact is reinforced by the large difference in group centroids for the two groups (-.309 for launched ventures vs. 1.418 for non-launched ventures).

### Employment Generated by Launched Ventures

Of the 58 people who had launched a venture that had been in operation for at least one year, 56 of them provided data on the number of employees added to their payroll. By 1989 the total incremental employment created by these new businesses totalled 225 (see Table 3).

**Table 3***Total, Average and Incremental Number of Employees by Year*

	Year of taking program				Total of all years	Incre- mental # <sup>c</sup>
	1985	1986	1987	1988		
# of participants <sup>a</sup>	25	18	30	13	86	
# who started ventures	18	13	17	10	58	
<b>Year before program:</b>						
Total # of employees	38	13	31	17	99	0
Average # of employees	4.2	3.3	2.8	2.4	3.2	
# of firms <sup>b</sup>	9	4	11	7	31	
<b>Year of program:</b>						
Total # of employees	57	34	68	29	188	89
Average # of employees	4.8	3.8	4.3	2.9	4.0	
# of firms <sup>b</sup>	12	9	16	10	47	
<b>Year after program:</b>						
Total # of employees	100	60	109		269	110
Average # of employees	6.3	4.6	6.4		5.8	
# of firms <sup>b</sup>	16	13	17		46	
<b>Second year after program:</b>						
Total # of employees	127	75			202	42
Average # of employees	7.1	5.8			6.5	
# of firms <sup>b</sup>	18	13			31	
<b>Third year after program:</b>						
Total # of employees	111				111	-16
Average # of employees	6.9				6.9	
# of firms <sup>b</sup>	16				16	
Cumulative incremental number of employees						225

<sup>a</sup> Number of respondents from each year's class who participated in the survey.

<sup>b</sup> Number of respondents who provided data on the number of employees hired as a result of the venture.

<sup>c</sup> Incremental number of employees for each year class group can be calculated by subtracting from the total number of employees for one year, the total number of employees from the previous year: 1985 class = 57-38 = 19.

---

The best way to understand the employment effects of the launched ventures is to analyze specific columns of Table 3. Consider the 1985 class. Twenty-five graduated from that class, and 18 of them launched ventures. One year before the program, nine of them were already in business employing 38 people with an average of 4.2 people per firm. At the end of the year of the program 12 of them were in business, employing 57 people with an average of 4.8 people per firm. This is an increase of 19 new employees (57-38) hired after the firm's representative concluded the program. Then, one year later the number of ventures had grown to 16 firms employing 100 people, and at the end of the second year to 18 firms with 127 employees. In the third year there was a decline to 16 firms employing 111 people, two firms having ceased operations during that period. The 1985 class had added a total of 73 new jobs to their communities in the three year period following completion of the program.

The columns showing the classes of other years reveal similar results. During the year of the program and for each year thereafter, the number of firms, number of employees and average number of employees increased. As compared to the base year prior to commencement of the program, 225 new jobs were created.

It should be noted from Table 3 that 31 of the 86 firms (36%) had actually started their ventures by employing people prior to the year of the program. This number is in line with the 31% of the participants who reported they were at the post-start up phase and 23% who were at the prototype stage. During the year they took the program and the years following the program, over half of the participants had started their ventures. Except for the 1985 class three years after the program, the average number of employees per firm tended to rise even though new firms were coming on stream. The implication from these data is that firms continued to grow or else larger-size firms tended to be started.

### Value Added Generated by Launched Ventures

Just 29 of the entrepreneurs gave sales and expense figures. Non-responders either decided not to release this information or had not yet generated any sales. For each of the 29 who gave sales and expense data, the value added (that is, the economic value created by the new enterprise) was computed by subtracting the cost of goods sold from their gross sales. The total *incremental* value added by these 29 companies was \$6,392,000 over the period 1985 to 1989. The results are presented in Table 4.

**Table 4***Total, Average and Incremental Value Added by Year (\$,000)*

	Year of taking program				Total of all Years	Incre- mental # <sup>c</sup>
	1985	1986	1987	1988		
# of participants <sup>a</sup>	25	18	30	13	86	
# who started ventures	18	13	17	10	58	
<b>Year before program:</b>						
Value added (000)	\$1,544	\$ 300	\$344	\$190	\$2,378	0
Average value added	\$ 259	\$ 300	\$ 86	\$ 38	\$ 148	
Number of firms <sup>b</sup>	6	1	4	5	16	
<b>Year of program:</b>						
Value added (000)	\$2,424	\$ 940	\$760		\$4,124	\$1,936
Average value added	\$ 404	\$ 235	\$ 95		\$ 229	
Number of firms <sup>b</sup>	6	4	8		18	
<b>Year after program:</b>						
Value added (000)	\$3,570	\$2,331			\$5,901	\$2,537
Average value added	\$ 357	\$ 259			\$ 310	
Number of firms <sup>b</sup>	10	9			19	
<b>2nd Year after program:</b>						
Value added (000)	\$5,489				\$5,489	\$1,919
Average value added	\$ 499				\$ 499	
Number of firms <sup>b</sup>	11				11	
<b>Cumulative incremental value added (000)</b>						<b>\$6,392</b>

<sup>a</sup> Number of respondents from each year's class who participated in the survey.

<sup>b</sup> Number of respondents who provided data which allowed calculation of value added.

<sup>c</sup> Incremental value added for each year class group can be calculated by subtracting from the total value added of one year, the total value added from the previous year: 1985 class = \$2,424,000 - \$1,544,000 = \$880,000.

---

Table 4 corroborates the employment evidence that more larger-sized firms were started. Not only were more firms started each year but also, as can also be seen from the total column, the value added per firm rose from \$229,000 in the year of the program to \$499,000 two years after the program.

From a closer inspection of Table 4, it would appear that the 1987 and 1988 classes had smaller sized projects. Indeed, this may be the case because the first two classes had a greater concentration of high technology ventures. Statistical tests were conducted to reveal differences between years, but the results were insignificant. This lack of significance, however, may have been a function of the small sample sizes.

### Factors Related to Employment and Venture Value Added

To get a better idea of the variables associated with employment and value added, three multiple regressions were performed. The first multiple regression (Table 5) determined the variables important in explaining employment, while the other two looked at value added and value added per employee (Table 6). A stepwise method of variable selection was used; the required minimum probability for the F-to-enter was .05.

**Table 5***Multiple Regression Equations for Number of Employees*

Statistics	Independent variables <sup>a</sup>				
	Constant	Project for employer	Project at prototype stage	Partner in a business	Years of experience
Coefficients	1.49	9.49	-4.31	3.45	.148
Order of entry		1	2	3	4
Change in R <sup>2</sup>		.37	.11	.05	.05
t-value	1.6	6.5**	-3.4**	2.7*	2.1*

F-Value = 13.6\*\*; R<sup>2</sup> = .58.

Statistically significant: \* (p < .05) \*\* (p < .01)

<sup>a</sup>Project for employer:

Venture analyzed on behalf of employer

Project for prototype stage:

Venture at prototype or testing stage, not at pre-startup or post-startup.

Partner in a business:

Participant is a partner, not a sole owner nor an employee.

Years of experience:

Number of years experience in the industry related to the venture.

**Table 6***Multiple Regression Equations for Value Added and Value Added per Employee*

Dependent variable	Statistics	Constant	Years of experience	Project for oneself
Average Value Added	Coefficients	\$200,720	31,328	-306,579
	Order of entry		1	2
	Change in R <sup>2</sup>		.38	.18
	t-value	2.4*	4.7**	-3.4**
	F-Value = 16.5**			
	R <sup>2</sup> = .56			
Average Value Added per Employee	Coefficients	\$20,490	3,098	
	Order of entry		1	
	Change in R <sup>2</sup>		.32	
	t-value	2.3*	3.3**	
	F-Value = 11.0**			
	R <sup>2</sup> = .32			

Statistically significant: \*(p<.05) \*\*(p<.01)

The first multiple regression equation identified four explanatory variables associated with incremental employment:

1. Project for employer—ventures analyzed on behalf of employers generate more employment.
2. Project at prototype and testing stage—projects at the prototype and testing stage generate less employment.
3. Partner in a business—being a partner in a business at the time of entry to the program (rather than working for an employer or being a single owner) is associated with greater employment.
4. Years of experience—the more experience in the industry of the venture, the greater the employment.

---

These four variables are statistically significant ( $p < .01$ ) in explaining employment levels of launched ventures. Collectively, they explain 58% of the total variation.

Since not as many firms reported data on value added, a smaller number of variables entered into the multiple regression equations for average value added and average value added per employee (see Table 6). For the average value added equation, two variables explained 56% of the variance:

1. Years of experience—those with more experience in the industry within which the new company was launched generated higher value per employee.

2. Project for oneself—sole ownership ventures tended to generate less value added than projects for employers or partners.

The equation indicates that a person doing a project for oneself will have a negative value added if he or she has fewer than four years of experience in the industry.

The third multiple regression was designed to determine the factors associated with the value added per employee or, in other words, the quality of the jobs created. Since only one significant variable (years of experience in the industry) entered into the equation, the result is not really multiple regression but bivariate regression. This single variable, years of experience in the industry, explained 32% of the variance.

## DISCUSSION

Of the 73 NEP respondents who had been out of the program more than a year, 58 (79%) launched new ventures. Of these new ventures, 56 of them produced 225 new jobs, and 29 had incremental value added of \$6.3 million, including additional wages and salaries of \$3.0 million.

When the multiplier effect of these new jobs and economic output is considered, the impact is even greater. For example, Davis (1986) calculated the income and employment multipliers to be 1.49 additional local value added per dollar of wages and salary and 54.5 additional man-years of employment per million dollars of wages and salary. The multiplier effect, therefore, is about \$4.5 million value added and 163 additional jobs. This brings the total effect, both direct and indirect, to over 338 jobs and value added of \$10.8 million.

### Causality and Benefits

It is clear that those attracted to the New Enterprise Program are serious practicing entrepreneurs capable of generating economic benefits. What is not so clear is the contribution of the NEP to the participants' success. Without the benefit of a matched sample of individuals who had not taken the program, no claim can be made of a causal relationship between participation in the New Enterprise Program and subsequent employment and value added.

However, it may be assumed that more enlightened decision-making results in improved economic benefits. If it is accepted that the New Enterprise Program assisted participants in making more appropriate launch decisions, including the decision not to launch, then it can be

---

argued that the NEP played some role in ensuring or conserving economic benefits.

No attempt was made in this study to calculate the savings resulting from avoiding the launch of infeasible ventures. Bankruptcies and other kinds of business terminations are a drain on the economy, and if an entrepreneurial program can help deter them, then additional benefits are delivered to society. For example, 13 of the NEP participants discovered that their original projects were infeasible. Accordingly, three of them modified their projects before proceeding, six launched a different venture, and four did not proceed. In the absence of the feasibility analysis conducted during the New Enterprise Program, we suspect that some of these participants would have proceeded and failed.

### Selecting Candidates

If one of the objectives of a new start-up program is to facilitate increased economic activity, then an important adjunct to achieving this end would be careful selection of the entrants to the program. This study demonstrates that younger candidates, not employed by large businesses, with completely new ventures past the pre-startup stage of development are more likely to launch their ventures. The data and experience in working with program participants suggest that a judicious mix of younger and older entrepreneurs and intrapreneurs is likely to produce the best output.

On the other hand, it is the more experienced person studying the project for an employer who is likely to produce higher economic benefits. Employer projects probably produce more economic benefits because their initial resources and undertakings are larger. The evidence, however, demonstrates that those who are creating a venture for themselves have projects which quickly grow in size.

## CONCLUSIONS AND RECOMMENDATIONS

Participants in an entrepreneurship course such as the New Enterprise Program are very likely to launch new companies. It must be assumed that many, if not all, of these ventures would have been launched regardless of the course. It is postulated, however, that because the NEP participants carried out feasibility analyses and most prepared business plans, better decisions were made.

Two pieces of data support this contention. Firstly, more than seven in ten of those who started a new enterprise did not launch the one they were considering when they entered the NEP. Secondly, 18% of NEP participants who had been out for at least six months had determined that their project was infeasible. It is clearly apparent that the entrepreneurship education process influenced their launch decisions.

Entrepreneurs and intrapreneurs with university degrees and industry-related experience appear to be the best candidates for this type of entrepreneurship education. Entrepreneurs are appropriate participants if the goal is to help those most likely to launch new companies. Intrapreneurs are good candidates if the objective is to assist those most likely to start enterprises which deliver large amounts of value added.

---

However, administering a course such as the New Enterprise Program is not an easy task. Each time the program is run, new publicity must be prepared, information meetings must be scheduled, literature must be sent out, and applications taken. In particular, the publicity is extensive and expensive because budding entrepreneurs or intrapreneurs are not an easily identifiable group.

Before the sessions start, the course administrator must find a location which can handle both lectures and the dinners. Then, once the course is started, there are feedback questionnaires for each session, mentors to be sought and matched with candidates, arrangements made for guest speakers, award sponsors solicited, and an evaluation team recruited. Putting on a successful program is time consuming and requires considerable learning on the part of the administrator. Thus, when an experienced administrator resigned at about the time this study was being prepared, a decision was made to terminate the program and devote the resources to other types of continuing education which were easier to offer. The high time commitment and the difficulty of raising funds for the New Enterprise Program caused administrators to favor other endeavors.

Typically, entrepreneurial education programs are not self-financing, and the New Enterprise Program was no exception. One source of funding was seed money from the provincial government to get the program started. By the time the program was terminated, this money had been spent. The other sources were a training subsidy which a small number acquired and a special grant for women entrepreneurs, which came from the Women's Secretariat.

Because the New Enterprise Program was required to become self-supporting, it had to be priced at a level which was somewhat prohibitive for some entrepreneurs. Thus, the training subsidy provided the difference, which allowed some participants, particularly women entrepreneurs, to join the program. Similarly, the program probably would have never gotten off the ground had the initial development costs not been covered by a government agency. However, because of the vagaries of politics and government budgets, assistance programs for entrepreneurs are tenuous. They may or may not be funded from year to year.

We suspect that had the economic benefits of this study been known at the time of termination, a different decision would have been made. The results of this study indicate that strong economic arguments can and should be made to agencies providing support. It seems likely that on-going periodic analyses of the employment and income effects of the ventures being developed in an entrepreneurial education program would do much to provide a buffer against those who would cancel or reduce funding. It would also cause administrators to think twice before cancelling programs. More comprehensive programs are more difficult to offer, but they also bring greater benefits.

Entrepreneurial education programs that provide candidates with the skills and support to conduct market feasibility analyses and to prepare business plans also have potential benefits for other parties. Besides the entrepreneurs themselves, there are the bankers and investors. Anecdotal evidence suggests that many would-be entrepreneurs with prospectively excellent projects are unable to find funding because they have not done the basic work to create a plan that makes financial sense. It seems likely that bankers and others would want to be informed of the jobs and value added created by entrepreneurs going through an entrepreneurial education program. These data might encourage them to send their clients to the program in order to facilitate venture financing. They might also want to have an opportunity to offer financing to candidates in the program.

---

Additionally, because the business press likes success stories, it is suggested that those managing entrepreneurial education programs would benefit from disseminating this kind of information. Articles describing the income and employment effects of ventures created by graduates of an entrepreneurial education program may attract program candidates, encourage government funding, or arouse the interest of potential investors.

In terms of the future, additional research is needed to determine causality between entrepreneurship education, venture launches and wealth creation. Comparisons of matched samples of participants and non-participants would provide valuable insights. Because entrepreneurship is a generative process (one entrepreneurial project leads to others), it would be valuable to follow participants and non-participants over a considerable period of time. Differences in the number, type and productivity of ventures should be tracked.

### Footnotes

<sup>1</sup>The authors would like to thank Anne Popma and Lance Secretan for their suggestions at the conceptual phase of this project, and David Reeves for his assistance in the literature review and statistical analyses.

### REFERENCES

- Clark, B. W., Davis, C. H., & Harish, V. C. (1984, April). Do courses in entrepreneurship aid in new venture creation? *Journal of Small Business Management* 22(2), 26-31.
- Conner, P. J. (1985). The facilitation and stimulation of entrepreneurship of young persons in Ireland through the Youth Enterprise Programme. In J. A. Hornaday, E. B. Shils, Jeffrey A. Timmons, & Karl H. Vesper (Eds.), *Frontiers of entrepreneurship research* (pp. 588-608). Wellesley, MA: Babson College.
- Davis, H. C. (1986). Income and employment multipliers for seven British Columbia regions. *Canadian Journal of Regional Science*, 9(1), 103-115.
- Dimick, D. E. (1986). *The first two decades: A survey of graduates*. Toronto, Ontario: York University, mimeograph.
- Gatewood, E., Ogden, L, & Hoy, F. (1987). Growth statistics on small business development centre clients: A national survey. In Robert G. Wyckham, Lindsay N. Merdeith, & Gervase Bushe (Eds.), *The spirit of entrepreneurship* (pp. 337-349). Burnaby, BC: Simon Fraser University.
- Hornaday, J. A., & Vesper, Karl H. (1982). Entrepreneurial education and job satisfaction. In J. A. Hornaday, E. B. Shils, Jeffrey A. Timmons, & Karl H. Vesper (Eds.), *Frontiers of entrepreneurship research* (pp. 526-539). Wellesley, MA: Babson College.
- Knight, R. M. (1987, Summer). Can business schools produce entrepreneurs?: An empirical study. *Journal of Small Business and Entrepreneurship* 5(1), 17-26.
- Long, W. A., & Ohtani N. (1988, Spring). Entrepreneurship education and adding value to new ventures. *Journal of Marketing Education* 10, 11-20.
- McMullan, W. E. (1988, Fall). The economics of entrepreneurship education. *Journal of Small Business and Entrepreneurship* 6 (1), 8-18.
- McMullan, W. E., & Vesper, K. H. (1987). Universities and new venture development: The spin-off phenomena. In Robert G. Wyckham, Lindsay N. Merdeith, & Gervase Bushe (Eds.), *The spirit of entrepreneurship* (pp. 350-370). Burnaby, BC: Simon Fraser University.

- 
- Watkins, D., & Morris, J. F. (1981). UK training and the development of entrepreneurs. In J. A. Hornaday, E. B. Shils, Jeffrey A. Timmons, & Karl H. Vesper (Eds.), *Frontiers of entrepreneurship research* (pp. 413-427). Wellesley, MA: Babson College.
- Wyckham, R. G., & Wedley, W.C. (Eds.) (1989). *Educating the entrepreneurs*. Burnaby, BC: Simon Fraser University.
- Wyckham, R. G., & Wedley, W.C. (1990, October). Factors related to venture feasibility analysis and business plan preparation. *Journal of Small Business Management* 28(4), 48-59.