PERCEIVED EDUCATIONAL NEEDS OF WOMEN

ENTREPRENEURS IN A BUSINESS INCUBATOR SETTING

by

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(ABSTRACT)

The focus of this study was to examine the past educational experiences women entrepreneurs had that related to the operation of their businesses in an incubator setting. The study also examined educational needs not adequately addressed for women entrepreneurs in this setting.

Data were gathered by participant interview methods using a qualitative research approach. Twenty subjects were selected for individual interviews. They were located through personal contact upon recommendation of the managers or executive directors of business incubator facilities. Interview questions addressed business, computer, oral and written communication, and general educational experiences related to their businesses as well as perceived educational needs. In addition, eight incubator managers where the subjects' businesses were located were also interviewed to determine their perceptions of the entrepreneurs' educational needs.

Demographic information was obtained from the subjects as to age, previous business experience, educational experiences, degrees earned, professional certification, and other
education. Their previous occupations as related to their present business enterprises were also obtained.

Taped responses to the interview questions were transcribed, verified, and examined for similarities and differences. A profile of the 20 female entrepreneurs who had their businesses located in a business incubator facility emerged. They had a mean age of 43 years, had worked for a number of years before making the decision to go into their own businesses, and had diverse educational backgrounds ranging from high school graduation through the Ph.D. degree. Their business experiences varied widely.

A common concern of the 20 subjects interviewed was lack of computer knowledge and experience. This concern surfaced regardless of prior course work completed. Also, development of additional accounting, communication, and marketing skills emerged as educational needs. Course structure of available courses was a concern. Courses offered on an intensive basis were needed. Further, the interviewees felt that considerable time could be saved by having course work and seminars taught on-site at the incubator facility. Coursework geared to small businesses so that the material and information obtained would have a direct application to their endeavors was desired. In addition, having a computer center within the incubator facility was identified as needed by the female entrepreneurs.
ACKNOWLEDGMENTS

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CHAPTER 1

INTRODUCTION

Since the mid-1960s, women have been entering the work force in significant numbers in order to meet increasing economic demands. As their numbers grow, so does their understanding of business issues and their desire to become entrepreneurs. Entrepreneurs are individuals who develop innovative concepts and ideas to implement their plans to develop fledgling businesses that will eventually become viable ventures. Nearly half of the women in today's work force want to start their own companies (Cole, 1989). These new businesses may evolve in atypical business settings such as basements, garages, within the household, or elsewhere. Unfortunately, statistics published by the National Business Incubation Association indicate a very high failure rate for these small businesses (Farrell, 1986).

A number of reasons can be identified for the high failure rate among new businesses. Lack of capitalization is a key indicator of failure, as is a lack of understanding with regard to business management. In some cases, individuals accustomed to working a typical 40 hour work week must now dedicate 60 to 80 hours a week to bring their new businesses to fruition. Indeed, starting a small business has been compared to having a baby, as it requires the same care, understanding, and fortitude as a child needing to be nurtured until maturity.
As the number of new businesses being started (and failing) has increased, studies show that over the five-year period of 1982-1987, the number of women entrepreneurs starting their own businesses has also steadily increased. Women with diverse educational training, work experience, and socioeconomic backgrounds have decided to start their own businesses (O’Hare & Larson, 1991). Indeed, in many areas of the country, women are starting businesses at twice the rate of men (Zellner, 1994).

**Background on Business Incubators**

Business incubators are a relatively new idea within the business community. A business incubator is a facility designed to assist the development of new firms by providing a complete business environment for an entrepreneur. Incubators may provide to entrepreneurs services and support including management, marketing, accounting and finance, and access to financing and capitalization. Services, equipment, and resources available include secretarial staff, a complete library of business resources, modern computer equipment, fax machines, copy machines, and many other office facilities usually at or below market cost. The incubator seeks to effectively link talent, technology, capital, and know-how with entrepreneurial talent in order to accelerate the commercialization of technology and encourage the development of new companies (Smilor, 1987).

The incubator concept was conceived in Batavia, New York, in 1959. By 1980, fewer than 15 business incubators were open in the country. Today, incubators number 530 and,
on average, one opens each week. Approximately 9,000 small businesses, primarily high-technology and light manufacturing companies, are currently in the incubation process (Lunsford, 1995). Nationally, 80% of the businesses that complete the incubation process continue to prosper independently in the community (Lunsford, 1995).

Entrepreneurs within an incubator take advantage of networking and problem solving situations. Many incubators have weekly and monthly meetings where associates discuss educational needs, mutual business and management problems, and make valuable contacts. Local colleges participate aggressively to assist the entrepreneurs in educational and training needs. Often college professors, administrators, and business leaders from all segments of the business community participate as mentors and serve on advisory committees and boards. In this way, associates can take advantage of those who are successful in business and who are currently educating future entrepreneurs.

By meeting the physical and mental needs of entrepreneurs pursuing successful business ventures, business incubators act in the same manner as "traditional" poultry incubators. They provide a safe, fertile environment for growth.

**Types of Incubators**

Incubators can be managed by various groups for diverse reasons and can be divided into four groups each representing a percentage of all incubators: public or not-for-profit (44%), private "for profit" (14%), academic related (14%) and hybrid
(19%) involving a combination of government and private sector funds (Griffin, 1995) (percentages do not add to 100% in original source).

Public, Not-for-Profit, Incubators

Business incubators that fall in the not-for-profit category are operated by government entities. Direction may be provided by city or county governments, planning commissions, economic development councils, or other publicly funded groups. The purpose of these centers is to improve economic development and to help sustain growth in the community, a goal achieved by nurturing a new business that will fill a niche in the community until it can sustain itself outside of the incubator. Once in the community, the new business can provide additional jobs, increase the tax base, and yield a new economic source for existing businesses. Generally, this type of incubator has associates with a market not limited to the local economic area. Thus, the business is not directly affected by local economic fluctuations (Allen & Rahman, 1985).

Private "For-Profit" Incubators

Generally, the real estate investor has reconditioned and/or remodeled an older building and is leasing square footage to various associates as well as providing a number of additional services to help them establish their "for profit" business. Chicago’s Fulton Carroll Center, one of the largest for-profit incubators in the country, has about 79 tenants with 15 being businesses owned by women. It offers space and services to associates at a
lower cost than can typically be found in the market (Mangan, 1990).

A survey by the National Business Incubation Association identifies preferred associates in incubators to include industrial, commercial high-tech, research and development, service, mail order, and wholesale operations ("Business Incubators," 1988). Retail businesses are typically not considered desirable because of the heavy traffic flow they bring into the facility which could upset the decorum of other associates trying to formulate, structure, and implement the groundwork for their new business enterprises.

**Academic Related Incubators**

Academic related incubators are frequently attached to colleges and universities. Incubators sponsored through universities allow entrepreneurs access to a wide range of academic resources. Particular departments normally involved include business administration which offers research studies, business and financial plans, and related areas. The engineering department offers technical support and assistance. Human resources include advisors schooled specifically in business related topics and graduate students available for "cheap labor" (Murphy, 1984). While incubators flourish with the assistance of higher education institutions, the schools and students involved gain first-hand knowledge of how to create, establish, and operate a successful business as an entrepreneur in a "real-world" setting. College campuses have expanded their involvement in entrepreneurial studies, producing a new generation of students genuinely excited by the prospects of owning their own businesses (Heiman, 1986).
The study of entrepreneurship in higher education is credited to Edward B. Shils, director of the Sol C. Snider Entrepreneurial Center at the University of Pennsylvania’s prestigious Wharton School (Heiman, 1986). Some school-operated incubators are devoted to general business and industrial pursuits, while others are strictly involved in higher technological advantages as is the incubator at the University of Virginia in Charlottesville. Other nationally recognized university-operated incubators include Rensselaer Polytechnic Institute (RPI) in Troy, New York, a venture shared by Carnegie-Melon and the University of Pittsburgh; and Yale University’s Science Park in New Haven, Connecticut (Murphy, 1984).

Hybrid Incubators

A hybrid incubator incorporates the support of both government and private sector organizations. These facilities may or may not be for profit. A wide array of operational approaches may be utilized within this setting. Often the most fitting and appropriate attributes of the other three types of incubators are reflected in the operation of a hybrid incubator.

Focus of the Study

Through use of personal interviews, the perceived educational needs of women entrepreneurs in a business incubator setting were qualitatively examined. Interviews were completed with 20 entrepreneurs in eight incubator settings. In addition, the eight managers of the incubators were interviewed to determine their perception of the
educational needs of the entrepreneurs. While much data have been published during the 1980s and 1990s on incubators, some featuring women entrepreneurs, literature on educational needs is limited. Sources searched included doctoral dissertations, periodicals, newspaper articles, and computer accessed publications (ERIC, BusPerInd, ProQuest, EducationInd). Even publications devoted to women and minority business issues (Executive Female, Entrepreneurial Woman, Black Enterprises) have limited information on the educational needs of women entrepreneurs in an incubator setting.

This study therefore, served two purposes:

1. To examine various educational experiences women entrepreneurs deem related to business success in an incubator setting.

2. To examine educational needs not adequately addressed for women entrepreneurs in an incubator setting.

Significance of the Study

The needs of women entrepreneurs are an important topic in today's society. More and more women with management experience and a solid work ethic are becoming entrepreneurs. Women find that they are failing to advance up the corporate ladder on an even keel with their male co-workers even with comparable credentials and educational backgrounds. In effect, their careers have hit a "glass ceiling" in the primarily male-dominated corporate environment. This perceived "ceiling" not only affects their potential monetary achievement but also limits their effectiveness in making managerial decisions
and being able to openly express their thoughts and feelings regarding business issues (Miller, Springen, & Tsiantor, 1992). Jacobson (1993) added other reasons why women leave comfortable positions to become entrepreneurs. "Women are willing to risk economic instability, in the short run, for increased independence, respect, freedom, human dignity, self-worth, expressiveness, and creativity," (p. 4501).

How significant is this transition of women from employee to entrepreneur? While women have long owned businesses or toiled behind the scenes in family companies, their numbers are reaching giant proportions in the small-business sector--one of the most dynamic parts of the United States economy. There are roughly 6.5 million enterprises with fewer than 500 employees that are owned or controlled by women in the United States.

That's almost a third of the total, according to estimates by the National Foundation for Women Business Owners. Already one-in-ten American workers is employed by a woman-owned company (Zellner, 1994, p. 105).

While women entrepreneurs, in general, continue to make a significant impact on the business world, and their numbers continue to grow within incubators, current literature addressing their special educational needs remains limited. These needs include steps involved in starting a business, personnel interaction skills and techniques, time management applications, written and oral communication skills, and accounting principles (Wibben, 1988).

By focusing on educational needs, incubator management teams will be able to better
train and educate women entrepreneurs enabling them to establish successful business ventures while in the incubator. Further, they should be able to continue their businesses afterwards when competition and possibly hostile environments will be encountered.

**Delimitations for Subjects**

Personal interviews were conducted with 20 women entrepreneurs who had been in a business incubator for more than 1 year. Subjects were volunteers from either an academic-based or nonprofit incubator in a mid-Atlantic state. Further, the subjects were from different types of businesses including service, manufacturing, consulting, and high-tech.

**Definition of Terms**

**Associate**--Is an individual who has a going business in an incubator or has filed a suitable business plan in an incubator.

**Business Incubator**--Is a center in which fax, copy, computers, and other business equipment is available as well as financial services and comradeship to help establish new business undertakings.

**Entrepreneur**--Is an individual desiring to personally grow and develop; to create a new product, process, or organization; or to operate a business differently (Cole, 1989).

**Mid-Atlantic States**--Include New Jersey, Delaware, Pennsylvania, Maryland, Virginia, North Carolina, and South Carolina.
Organization of the Study

Chapter 1 defined female entrepreneurs, described their significant impact among small businesses, and offered possible reasons for their high failure rate. Also, a variety of business incubators were discussed, specifically their services and support available to entrepreneurs.

Chapter 2 presents a review of literature relating to the topics in chapter 1. Chapter 3 describes the methodology that was used to conduct this study as well as the comprehensive survey to gather data. The sample population, research design, instrumentation and statistical analysis are also discussed.

Chapter 4 is devoted to the formal analysis of the data. The purpose of this chapter is to address the perceived educational needs of women in a business incubator setting.

Chapter 5 includes a summary of the research findings, conclusions, and recommendations for future study.
CHAPTER 2

REVIEW OF LITERATURE

Leading publications, including journals, business magazines, newspaper articles, and other available sources support the premise that the 1990s and the first part of the 20th century will be the era of the "entrepreneur." Webster's New Collegiate Dictionary (1989, p. 378) defines entrepreneur as "one who organizes, manages, and assumes the risks of a business or enterprise." Lavoie's (1984/1985, p. 34) article, "A New Era for Female Entrepreneurship in the 80's," defined a female entrepreneur as "the female head of a business who has taken the initiative of launching a new venture, who is accepting the associated risks and the financial, administrative and social responsibilities, and who is effectively in charge of its day-to-day management." In 1986, the Department of Commerce suggested researchers commonly define entrepreneurship as "one who takes an active role in the decision making and risk taking of a business in which she/he has a majority ownership" (Moore, 1990, p. 276).

The following literature review not only addresses the issues of specifically female entrepreneurs, but it also delves into the subsequent impact of business incubators. For this study, the scope of referenced materials on this subject included (a) general traits and educational needs of women entrepreneurs, (b) demographical and statistical trends of
women entrepreneurs, (c) general information pertaining to incubators, (d) incubator management issues.

**General Traits and Educational Needs of Women Entrepreneurs**

In 1986, the U. S. Department of Commerce published *Women and Business Ownership: An Annotated Bibliography* defining and describing women entrepreneurs.

Generally the female entrepreneur is from 35-55 years old, formerly or still married with a family, and is more highly educated than the national average. She comes from a middle-income socio-economic background and works full time. Her immediate family members are also self-employed. She operates a relatively new, young firm, which is her first entrepreneurial effort; and probably it is a service or retail business with few employees. Personal savings or assets are her primary source of start-up financing. She has been employed for several years before starting her own business and has had some managerial experience in her entrepreneurial field. She is motivated by a desire for money, independence, and a chance to use her skills and talents.

The most essential qualities for entrepreneurial success include perseverance, good business skills, hard work, goal-setting, good relationships with staff, marketing, education, and training (Brodsky, 1989; "Female Entrepreneurism", 1994; Wells, 1994).

Puckett's (1992) thesis, "Personality Characteristics of Women Entrepreneurs," utilizing four research designs (quantitative-experimental, quantitative-descriptive, qualitative-experimental, qualitative-descriptive), found significant differences exist in the skills,
forecasting/planning, personal experience and the talents, entrepreneurial initiative and public relations of women as compared to women executives. It was also suggested that women, having the desire to become entrepreneurs, participate in seminars to build leadership skills, and attend classes on market research/forecasting (Glenn, 1986; MacDonald, 1985).

Why do women become entrepreneurs? Since the 1950s, the labor market has been steadily expanding; and with this expansion, the need for women to achieve goals and attain satisfaction in their work has arisen (Putnam, 1993; Silver, 1994). While gaining wide access to the labor market, women have failed to gain a strong foothold in senior management. In fact, women seemingly can only progress, to a certain extent, up through middle management and are unable to progress into senior management without great difficulty. In effect, they have hit the business "glass ceiling" (Berens, 1986; Miller, Springer, & Tsiantos, 1992).

Many entrepreneurs are displaced persons who strike out on their own only after being fired, laid-off or passed over for a promotion or after facing deep frustration in their jobs (Blair, 1987; Cole, 1989; Wells, 1994).

Jacobson's (1993) dissertation, "Essential Values and Characteristics of Entrepreneurial Women Formerly Managers in a Corporate Setting," explored the values and characteristics held by six women who left stable management positions to become entrepreneurs. The women changed from a corporate setting to an entrepreneurial business for "personal reasons." These reasons, the study revealed, were common values
among successful, high-achieving entrepreneurial women including economics/profit, respect/rights, human dignity/self worth, expressiveness/freedom, creativity/ideation, and management. All six women in the study indicated they were attempting to create a balance in their lives between work and play (Applegate, 1992; Goldberg, 1989; Hiss, 1992; Olinger, 1989; Still, 1991).

The article "Office Options" (1987) indicates that female entrepreneurs need to decide on a goal and strongly target their contacts and networking, something they have failed to do to any extent in the past. This article also noted that entrepreneurs, in general, work with single minded intensity striving for autonomy, independence, and self reliance (Belcourt, 1987; Chandler & Murphy, 1994)

Jaffe (1985) specifically noted the drive of women entrepreneurs.

Few researchers have pinned information on what is happening to these women in their career development and life transitions. Second guessing women's decisions, delegating less responsibility to women, sexual harassment, pay inequities, and unrealistic performance appraisals continue to occur. Women see few of their gender in high levels of business and are leaving companies to form their own businesses (p. 82).

Kent (1982, p. 2), in his position paper entitled "Entrepreneurship: Education for Women, a Research Review and Agenda," discussed the importance of entrepreneurship to the American economy as a whole and specifically states that research on entrepreneurial education for women is almost non-existent. The paper discussed sexual
stereotyping in schools, skills to become entrepreneurs, and entrepreneurship education. Other authors who expressed the same concerns includes Cooper and Dunkelberg, 1987; Diffley, 1982; Eliason, 1981a; Eliason, 1981b; Hili, 1989; Kent, 1983; McCord, 1994; Pellegrino, 1979; and Williams, 1986.

Bartlett, Poulton-Callahan, and Sommers (1982), in their article "What's Holding Women Back," discussed barriers that hinder women's advancement. These barriers include early education channeling (typing versus management courses), lacking work experience diversity, social exclusion, and the perceived inability to achieve power (Larkin, 1993).

**Demographical and Statistical Trends of Women Entrepreneurs**

According to the U. S. Department of Labor (1987), the labor force participation rate for all women 16 years and older has increased from 32% in 1942 to over 52% in 1981. The most important shift in the distribution of the sexes by occupation in the 1970s was a larger representation of women among managers. While women are joining the work force in great numbers, they have made little progress in winning the power posts of corporate America (Dingle, 1987; Finlay, 1990; Larkin, 1993; Reece, 1987; Reese, 1992; Richard, 1990; Tepper, 1980).

A recent study released by the Federal Glass Ceiling Commission stated, "At the highest level of business, there is indeed a barrier only rarely penetrated by women" (Kaufman-Rosen & Kalb, 1995; Kerka, 1993, p. 24). This report also stated that women
today make up a mere 5% of senior managers (vice president or higher) in Fortune 1000 companies and that barriers to senior positions include outright discrimination, institutional indifference, lack of mentoring, and the (male) perceived conflict of career versus family life.

As national statistics have shown, female entrepreneurs have been responsible for the huge surge in entrepreneurial start-ups over the last 10 years (Seger, 1991). Wibben's (1988) dissertation, "The Perception of Selected Female Entrepreneurs Regarding Entrepreneurial Competencies," reported on a survey of 151 women entrepreneurs in business at least six years. Over 95% were either the original founder or had purchased their Businesses. Approximately 90% have a high-school education or an equivalent and nearly 99% of participants felt that education pertaining to self-employment was important to a successful entrepreneurial experience (McNamara, 1979).

Three factors were particularly significant in the rapid rise in the number of women-owned businesses: (a) on the increasing number of women who have acquired skills that can be translated into entrepreneurship, (b) more women who are preparing themselves through education and training for business opportunities in expanded fields, and (c) entrepreneurial opportunities provided by the expanded role of small businesses in the economic growth of the country (U. S. Department of Labor, 1987). In fact, roughly 200 colleges and universities now teach courses on entrepreneurship (Cole, 1989).
General Information Pertaining to Incubators

The first incubator was started in Batavia, New York, as the Batavia Industrial Center in 1959. The next three decades saw an increase in both the number of incubators and in the amount of literature written on that subject. Much of the actual growth and development of incubators occurred in the 1970s while literature and research development continued into the 1980s and 1990s (Lunsford, 1995).

Several research articles describe the development and impact of academic-related incubators—typically allied with a major university. Brooks (1985), in "High Tech Incubators: Hatcheries or Hype," discussed the advantages of this type of incubator, which usually encourages technologically advanced entrepreneurs to develop products such as computers, software, circuit boards, and other items which meet the ever changing needs of advancing technology. Hisrich and Smilor (1988) in "The University and Business Incubation: Technology Transfer through Entrepreneurial Development" indicated the need for academically sponsored business centers (Preer, 1990). Allen (1985, 1988), in his articles, "Business Incubator: Assessing Their Role in Enterprise Development" and "Business Incubators and Life Cycles," addressed, in particular, the purpose and need for academically-based incubators being started for economic development within the community.

Businesses that start in the sheltered environment of an incubator succeed 80% of the time, reported Adkin (1991), executive director of the National Business Incubation Association, in "Hatching Success." Until now, no one has understood why incubators
breed success. The most obvious benefits of low-cost space and services are not the most crucial elements for success. Rather, the networking fostered by close quarters and the mentoring support of key professionals make the biggest difference to those who succeed (Kang, 1991; Lichtenstein, 1992; Stone, 1989; Temali, 1984).

Collins' (1983) *Professional Women and Their Mentors: A Practical Guide to Mentoring for the Woman Who Wants to Get Ahead* surveyed 400 women with mentor experience. Collins concluded that professional women must take a more active role in seeking mentors and later becoming a mentor. Mentors are essential for women's success. The current mentoring roles played in the woman to woman or man to woman scenario must be reassessed (Missirian, 1980; Prince, 1985).

**Incubator Management Issues**

The incubator management team provides a network ensuring entrepreneurs will have a thorough understanding of the time and effort necessary to succeed, establish a solid business plan, and build sufficient capital. What attracts women entrepreneurs to business incubators? With the development of incubators across the country and with the many perks available, women feel incubators offer business opportunities with less risk than a traditional entrepreneurial situation. Without the assistance of incubators, entrepreneurial ventures tend to be ill planned and financed. But, with the availability of a business incubator, women have an opportunity and an outlet for a successful business venture (Duda, 1994; Feniger, 1991). In Allen and Rahman's (1985) "Small Business Incubators:"
A Positive Environment For Entrepreneurship" the issue of useful services in an incubator was addressed. Fifty-six respondents from 12 different incubators answered the following questions: (a) How useful are the various types of services provided, and (b) What are the most useful "core" services an incubator should provide? The top four answers to the first question were risk management and insurance, building security, mail service, and government grants and loans. The top four answers to the second question were building security, clerical service, computing and information services, and business plan preparation.

Locating and acquiring available capital is a critical aspect of the incubation process. The management team directs and counsels entrepreneurs through the decision process, whether the entrepreneur goes to a local bank or through the venture capital process.

Some incubators have three or four lending vehicles willing to make loans, often at a much greater risk than an ordinary commercial lender taking into account the high success rate of incubator associates. The article "Financing and Managing Fast Growth Companies" (Kozmetsky, Gill, & Smilor, 1985) indicates the many sources of capital available to the entrepreneur, including venture capital involving a financier who wants a portion or interest of the business enterprise in return for financial arrangements. However, many entrepreneurs, especially women, are denied financing as they are considered a "high-risk" investment (Hisrich, 1986; Mokry, 1985; National Council for Urban Economic Development, 1985; Sitterly, 1994).
A recent Marquette University study found that women had a median startup amount of $15,000 for a one woman company, compared to $36,000 for male entrepreneurs (Zellner, 1994). That may be because women often start service businesses that need less capital or because they have fewer assets for collateral. In addition, women fail to adequately network for sufficient capital. "Men still tend to belong to organizations where a handshake and a referral will get them the money they need to get started" (p. 108), according to Reid-Crisp, national director of the National Association for Female Executives (Zellner, 1994). Fledgling business owners mostly depend on incubator management teams for financial advice, according to Lavelle, Director of Fulton-Carroll Center.

We frequently help them with cash flow projections or cash management.

The incubator also provides loans, such as zero-interest property-improvement loans up to $25,000, which must be paid back over the life of the lease. There also are loans available for small equipment purchases and a 'boot-strap fund' which lets tenants borrow up to $10,000.

(Mangan, 1990, p. 68)

This relationship between financial institutions and incubators helps to achieve the criteria and mission of the incubator: having solid financial support to help the individual entrepreneurs develop appropriate business management, sound financial conditions, and cash flow analysis from Initial incubation to graduation. Having solid financial backing is
one advantage of being associated with an incubator rather than being an independent entrepreneur (Mangan, 1990).

Chapter Summary

The review of the literature in chapter 2 shows that research has been completed in the area of business development centers (incubators) as well as on the traits of entrepreneurs. However, the literature does not address to any extent needs of women entrepreneurs related to education. This study examines their educational needs related to developing their own businesses in an incubator facility.

Women are entering the labor force at an accelerated rate brought about by the social and economic needs for the family to have two incomes. Few women, however, have made it to the top level of management. Because of this and other factors, women have been responsible for the significant rise in the number of new fledgling businesses. Colleges and universities have expanded their course offerings to teach small business management.

Incubators had a rapid expansion during the 1980s, particularly during the recession. In the 1990s, approximately one incubator is being opened per week. The controlled and protected environment of this type of facility is excellent in meeting the needs of women working with their fledgling businesses. Networking and comradeship are particularly important to the female entrepreneur to give her that extra feeling of security as she progresses in the development of a small business.
The incubator management supplies the basic tools to assist in establishment of a business. These basic tools include insurance, building security, mail service, and government loans and grants. The relationship of the business facility to financial institutions is also helpful. Also helpful is the development of a sound business plan and financial statement analysis to the new business developer.

The projections of the U. S. Department of Commerce and other government agencies indicate that a greater number of women will be developing their own businesses. Women will continue to have the desire to express their own managerial traits in developing a small business. For their business to succeed, they need to have a variety of needs met, including educational. Thus, this study specifically examines the educational needs of women starting their own businesses in an incubator setting. The literature reveals little previous research directed to the educational needs of women entrepreneurs.
CHAPTER 3

RESEARCH DESIGN AND METHODS

The research procedures and methods used are presented here. The central purpose of the study was to determine experiences of women entrepreneurs, with the main focus being their perceptions of educational experiences related to business success and their perceived educational needs within an incubator setting.

Research Design

A qualitative research design was chosen as an appropriate means for meeting the purposes of the study. The label "qualitative research" refers to an interpretive process that seeks to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world (Van Maanen, 1985, p. 9). Qualitative methods consist of three main types of data collection: (a) in-depth, open-ended interviews; (b) direct observation; and (c) written documents. This study utilized the in-depth, open-ended interview process for data collection.

Open-ended questions permit persons being interviewed to take whatever direction and to use whatever words they want to represent what they have to say (Patton, 1990, p. 10). Standardized open-ended interview techniques have strengths and weaknesses. Certain interview procedures strengthened this study:
1. Respondents answered the same questions, thus increasing comparability of responses. The researcher asked the same questions, using the same inflection and did not lead any one interviewee on a different path than any other. In this way, continuity of questions was established.

2. Data were completed for each person on the topics addressed in the interview. The use of a personal interview protocol and recording devices assured complete data gathering for each subject.

3. Reduction of interviewer effects and biases were achieved by the utilization of a written questionnaire. Personal biases and opinions were avoided on the part of the researcher.

4. By allowing third-party evaluators to randomly review both the written questionnaire and the taped recordings, tampering issues were avoided and the authenticity of the research was confirmed. Future users of the research can see and review the instrumentation.

5. The written questionnaire facilitated organization and analysis of the data. Answers were compiled and compared with identical information requested from the managers and the entrepreneurs to determine if there was triangularization in connection with the responses.

Weaknesses involve having little flexibility in relating the interview to particular individuals and circumstances. Further standardized wording of questions may have
constrained and limited naturalness and relevance of questions and answers (Patton, 1990, p. 297).

The data from interviews consisted of direct quotations from women entrepreneurs about their experiences, opinions, feelings, and knowledge. In the qualitative discussion with each of them, details of various business related experiences were discussed as well as possible ways to improve the experiences. In addition, supporting data were collected from interviews with the eight incubator managers. The qualitative approach allowed the researcher to probe and redirect questions to uncover specific needs of the entrepreneurs interviewed.

**Identification of Incubators**

The incubators were of the academic-based or nonprofit nature and were located in two states: North Carolina and Pennsylvania. Each incubator facility selected had one or more female entrepreneurs going through the incubation process. The incubator sites were chosen for the variety of businesses and stages of the businesses. It was necessary, to have the cooperation of the incubator manager since the manager was also participating in the study and answering questions similar to those of the entrepreneurs related to needed education.
**Participant Selection Process**

Twenty female entrepreneurs currently in an incubator and working in a Mid-Atlantic state were selected as subjects for the study. Subjects were selected on the basis of their willingness to participate in the study, provided they met the delimitations of the study. The subjects came to the attention of the researcher through personal contact with business incubators, through references, and through personal phone contact. Appointments were arranged by phone, while the actual interviews were conducted in person. All subjects selected for inclusion were female entrepreneurs who had been in an incubator for more than one year. The Qualifying Instrument in Appendix A was used to compile information needed for selection of the subjects.

**Instrumentation**

An interview guide was used to obtain data for the study. Questions were organized into three parts: (a) demographic information, (b) educational experiences related to entrepreneurship, and (c) needed education. Demographic information was collected on each incubator associate (entrepreneur) so that related factors could be determined. These included age, previous business experience, whether the previous business experience was related to the enterprise that the associate was undertaking, previous educational experiences, and various professional standards and certificates that the individual may have obtained.

The interview guide was based on information from an extensive review of literature and on personal experiences of the researcher with associates in an incubator setting. The
guide was then converted to the interview questionnaire, which was used in collecting data for this study. A copy of the interview instrument is found in Appendix B. It was tested on three women involved in an incubator that was not used in the final study. An expert in qualitative analysis reviewed the three interviewees’ responses to determine the validity of the questionnaire.

**Interview Procedures**

Over a period of eight years, the researcher has interviewed over 100 people in various stages of starting their own businesses. These interviews led to development of an application and business plan to enter a Business Development Center approximately 90% of the time. Thus, an extensive knowledge base of issues affecting new entrepreneurs proved beneficial in conducting the interviews.

Identical procedures were used to conduct each semistructured interview. The format of the interview was as follows: (a) Arrangements were made with each subject to determine an agreeable location and time frame for the interview. (b) Interview information was obtained on the basis of anonymity by recording only a first name. (c) A cassette recorder was utilized in recording the interviews, and (d) At the conclusion of each interview, the cassette tape was labeled with the interviewee’s first name. The interviews could last 30 minutes to over 1 hour in duration depending on the interviewee’s reaction to the question put before her.
Interviews of Incubator Managers

The managers, wherever possible, were interviewed after the associates in the incubator facility. The instrument used during the managers' interviews was developed from the "needed education" part of the associates' instrument. It contained similar questions, adapted for responses by the managers. Interviewing the managers after the associates proved beneficial in expanding on areas that both mentioned. The managers' responses assisted in comparison and compilation of the data as well as in triangulation of the data. The interview instrument appears in Appendix C.

Third Party Evaluation of Transcripts

Three individuals, consisting of (a) a director of economic development, (b) a member of senior management in marketing, and (c) an executive director of an incubator facility, were chosen to review the interviews that were transcribed upon the completion of all interviews. These individuals each randomly selected two tapes and verified the accuracy and thoroughness of the transcripts assuring that what was transcribed matched what was on the tapes.

Analysis of the Data

The purpose of qualitative inquiry is to produce findings. The process of data collection is not an end in itself. The culminating activities or qualitative inquiry are analysis, interpretation, and presentation of findings (Patton, 1990, p. 371).
Analysis consists of three concurrent flows of activity: (a) data reduction, (b) data display, and (c) implication drawing/verification. Data reduction refers to the process of selecting, focusing, simplifying, abstracting, and transforming the raw data that appear in written-up field notes. Data display is defined as an organized assembly of information that permits implication drawing and action taking. Looking at displays helps the researcher to understand what is happening and to do something—further analysis or action based on that understanding. Adequate steps toward reducing data and proper display yield the foundation for implication drawing/verification (Miles & Huberman, 1984, p. 23).

Ask Sam for Windows (1994) was used as a database to compile and organize similar data. The raw data were subdivided into a number of categories, such as: names, addresses, and telephone numbers of interviewees. A number of other categories were also filed to include incubator managers, addresses, and telephone numbers as well as economic development contacts in Pennsylvania and North Carolina. Files on previous occupations and present business of entrepreneurs were also adopted. Extensive use of Ask Sam was the word processing aspect. This was used to organize field notes and arrange material from the transcripts into clearly defined categories. Ask Sam provided an excellent vehicle for manipulating and compiling the obtained data from the transcripts. It also provided for the systematic file storage of data transferred from The Ethnograph version 4.0 (Seidel, Friese, & LeCnard, 1995) that was used during the interviewing procedures.
The Ethnograph, a coding and retrieving software package, was used for work in the field to list and combine short words and phrases that pertained to describing the interview situations, including peripheral data that were current and relevant to the researcher. The Ethnograph provided for coding so that similar words and phrases could be inserted on numbered lines and brackets used with an assigned code word to refer to the specific group. This permitted definite relationships to surface, so that certain perceived needs would surface in more than one category. Field notes were recorded on The Ethnograph so that they could later be refined and transferred to Ask Sam. With The Ethnograph hardcopy can be printed to check for continuity and emergence of similar themes. The main advantage of The Ethnograph is the extensive coding capabilities (Weitzman & Miles, 1995, p. 191).

A compilation and analysis of data identify similarities from the individual transcripts. Differences were carefully compiled. The interview transcripts were examined to determine the existence of any common features that were unusual in nature. In addition, unique instances were examined and described in the study, particularly if they surfaced as predominant in an interview. Further, marked differences between the statements of a facility manager and an associate were noted.

Chapter Summary

This chapter presented the research methods used to conduct the data-gathering segment of this study. Twenty female entrepreneurs and eight managers, currently in an incubator setting, were personally interviewed in sessions ranging in time from 30 minutes
to over 1 hour. These sessions were tape recorded, transcribed, coded with the interviewees' first name, and verified by a third party. Each individual who verified the transcripts submitted a letter indicating the accuracy of the transcripts.

The interview responses from both the incubator associates and their managers were carefully compared to help determine if there was triangulation of the data, a procedure permitting depth of responses in certain areas, a benefit of a qualitative study.
CHAPTER 4

RESULTS OF STUDY

This chapter presents the results of the interviews involving 20 women entrepreneurs located in two states. The women were, in each case, located in a business development center and referred to the researcher either by direct contact or on advice of the incubator manager or executive director.

Each interviewee had her own business and was making steady progress toward the time when the fledgling business and owner would be graduated from the business development center. The study was undertaken to meet two purposes:

1. To examine various educational experiences women entrepreneurs deem related to business success in an incubator setting.

2. To examine educational needs not adequately addressed for women entrepreneurs in an incubator setting.

Locating Subjects and Conducting Interviews

The proposed interviewees were recommended by their incubator manager or executive director. The following procedure is used in this study.
Subject Identification

Twenty women who made a career change, from being employed to becoming self-employed by starting a new business, were interviewed. These subjects were identified through various means with the assistance of the executive director of the facility in Lynchburg, Virginia, where the researcher has worked with the incubator. Managers of incubators in North Carolina and Pennsylvania were contacted. They were asked if they would cooperate with the researcher in identifying female entrepreneurs who had been in the incubator for a sufficient length of time to qualify for the study. These two states have a number of incubator locations where potential subjects could be found.

State supported agencies, which provide financing to people with start-up businesses, were also contacted to identify suitable entrepreneurs. Other subjects came to the attention of the researcher through referrals, social contacts on previous occasions with other incubator facilities, and direct inquiries. A number of phone calls were made directly to the potential subjects to screen them and to set up appointments.

The selected subjects were telephoned to schedule the interview sessions, or, in some cases, the incubator manager or executive director assisted in contacting the proposed subjects and arranged the interviews. The subjects were telephoned again prior to the interview sessions, usually within 24 to 48 hours, to remind them of the date and time. All of the participants in the study were courteous and expressed an interest in the research project. They indicated that the study should help in providing additional information for
women starting their own businesses. Further, they felt the study would be helpful to women who are incubating their business through a business development center.

**Incubator Locations**

The incubators used in the study were located in two states. One, the Commonwealth of Pennsylvania, has the largest number of incubators in the United States. Currently it has 55, representing an increase of two over the 53 that were located there in 1994.

The state of North Carolina was also chosen since it has 16 incubators and was easily accessible. Initially, the Commonwealth of Virginia, with four incubators, was considered for convenience of location. The Lynchburg, Virginia, facility was used for pilot interviews prior to conducting the study and, therefore, could not be included in the final study. The three remaining Virginia incubators were not used due to lack of female entrepreneurs. Thus, a larger selection of potential subjects could be obtained by interviewing in Pennsylvania and North Carolina where considerably more business development centers are found.

Three incubators were used in Pennsylvania; two were located in an urban area in the southeastern section of the state. The third one was high tech and located in a rural area of the state but sponsored by a major university. The university provided a high-tech facility for business support. The two located in the southeastern portion of Pennsylvania were urban in nature and were supported by state and local funds and local organizations.
One of the two facilities promoted entrepreneurship especially for women and minority groups.

Five incubators were chosen in the state of North Carolina. One was high tech in nature and located near the state capital. Two were located in rural areas. Both of the rural incubators were public schools converted into incubator facilities. Two had originally been industrial factories and warehouses that had various occupants over the years and were in danger of being demolished before being converted to incubators. Grants were obtained from both state and federal sources to save these buildings and convert them into incubator facilities.

Incubators were chosen that had a small number of participants, usually no more than 15 or 16. The executive directors of these facilities had closer contact with the associates than those in larger incubators. The managers or executive directors were, therefore, able to give a more complete and in-depth report of the subjects educational needs, thus providing greater strength to the triangulation aspect of the research.

Table 1 provides the list of incubator locations with information about the support and types of associates. Funding sources included local, state, and government. The term "government" is used for incubators receiving funds from federal, state, and local sources.

Either before, during, or after the interview in each case, the subjects wanted to show the researcher their facilities. Basically, they discussed the activities that went on within the particular business enterprises. In some cases, a business history and its place within the overall scheme of the particular economic development situation were discussed,
Table 1

**Incubator Characteristics**

<table>
<thead>
<tr>
<th>State</th>
<th>Location</th>
<th>Support Type</th>
<th>Associate Type</th>
<th>Manager Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>X</td>
<td>Gov't.(^a)</td>
<td>General</td>
<td>Helen(^b)</td>
</tr>
<tr>
<td>PA</td>
<td>X</td>
<td>State</td>
<td>Hi Tech</td>
<td>Stephanie</td>
</tr>
<tr>
<td>PA</td>
<td>X</td>
<td>Local</td>
<td>General</td>
<td>Paul</td>
</tr>
<tr>
<td>NC</td>
<td>X</td>
<td>Local</td>
<td>General</td>
<td>George</td>
</tr>
<tr>
<td>NC</td>
<td>X</td>
<td>Gov't.</td>
<td>Hi Tech</td>
<td>Ringo</td>
</tr>
<tr>
<td>NC</td>
<td>X</td>
<td>Local</td>
<td>General</td>
<td>Mark</td>
</tr>
<tr>
<td>NC</td>
<td>X</td>
<td>Local</td>
<td>General</td>
<td>Peter</td>
</tr>
<tr>
<td>NC</td>
<td>X</td>
<td>Local</td>
<td>General</td>
<td>Marsha</td>
</tr>
</tbody>
</table>

\(^a\) Includes support from federal, state, and local sources.

\(^b\) Fictitious names are used to identify managers, these are not the actual names of the managers interviewed.
proving to be of interest to the researcher and giving the researcher much insight into the motivation and drive of these women starting their own businesses.

**Interview Procedures**

Most participants were able to keep their appointments and were in the designated place as scheduled for the sessions. In each case, the location was in the business development center. However, in some cases, depending upon space and floor layout, the interview sessions were conducted in the board of directors’ room, the training room, or other general purpose room. Most of the interviews were completed within the confines of the individual participant’s business. The interviewees seemed to feel more comfortable in discussing the various topics in their own surroundings, in areas that they had created and were in effect part of them. Interviews conducted at the person’s place of business within the incubator seemed to be more relaxed than those conducted in a conference or board of directors’ room.

The physical settings of the individual offices or business locations varied considerably depending upon the feelings and aspirations of the interviewees. Some brought plants, pictures, and other objects from home and had created a very relaxed atmosphere within their business environment. Others were more structured and formal in nature. In each case, the business environment seemed to reflect some characteristics of the individual business owner.
One problem encountered was that some of the interviewees were very busy and had to take time away from other activities to participate in the interview process. In a couple of cases, it was necessary to interrupt the interview and continue later. This occurred when the participant took care of a business problem that needed to be addressed before the interview proceeded. In each case where interruptions occurred, the interviewee was apologetic about the interruption.

The sessions with the associates were designed to last approximately 45 minutes to 1 hour. Some interviews lasted 30 minutes and others lasted well over an hour. The typical session lasted about 50 minutes. Transcripts of the individual sessions produced various numbers of printed pages, ranging between 10 and 30 pages per session. The average of 12 pages per subject resulted in approximately 350 double spaced pages of recorded data. Responses to individual questions produced a wide variation ranging from as much as one line on one subject to several pages on another. The amount of time required to transcribe the audio tapes averaged about three hours per tape. Appendix D contains letters from three individuals who evaluated the accuracy of the transcripts. Each randomly selected two tapes and compared what was recorded to what was transcribed.

**Interviewee Demographics**

This section contains a profile of personal characteristics and business-related characteristics of the interviewees. Such characteristics as age and previous and present career areas are described.
Personal Characteristics

Several common characteristics of the subjects who participated in the study were found. For example, all had worked in a variety of careers before starting their own businesses. Many of the subjects had previously been in female-stereotyped occupations including clerical, secretarial, or educational work. A few had quite different previous occupational experience that would not necessarily be associated with typical female employment.

The ages of the interviewees ranged from 26 to 58. Measures of central tendency revealed a mean age of 43.05, a median age of 42.50, and a mode of 45. Three participants in the study were 45 years in age. The closeness of the three measures of central tendency would indicate that age distribution was somewhat symmetrical in nature, thereby each measure of central tendency supporting the other. In fact, 68% of the associates were in the age group of 35 to 53. Most of the interviewees had been employed in the work force for a number of years before deciding to operate their own businesses.

Some indicated during the interviews that they had taken time off from paid employment when their children were growing up and that they were now in the empty nest situation. Thus, they were able to either rejoin the labor market or enter into a business enterprise of their own choice. One interviewee in her 20s made the decision earlier, while most decided on entrepreneurship in their middle age. The oldest
participant, 58, had a college education and was a high school science teacher before going back to school and earning her Ph.D. She now operates a business in the high-technology biological research area. Table 2 provides statistical information for age data collected from the interviewees. Names used are not those of the actual interviewees.

Previous Occupations

Previous occupational experiences of the interviewees included teaching, various managerial positions, real estate sales, and retailing. One interviewee had an electrical engineering background with master’s degrees from two prestigious universities in various types of electrical engineering. Several of the entrepreneurs had teaching experience, including both elementary and secondary. They indicated that teaching had provided an excellent stepping stone to the businesses that they are now running.

In each case, the participants were either dissatisfied with a previous occupation or they felt they were confined by their past jobs or positions to a dead-end situation. Also, the interviewees expressed a desire to assert themselves and to use abilities that they had acquired either in their previous occupations or through their educational backgrounds. Table 3 contains a tabulation of previous careers and current entrepreneurial careers of the participants.

Formal Education

The educational backgrounds of the subjects varied from a General Education Development diploma to Ph.D. in biological science earned at a major university. The
Table 2

**Age Data and Related Descriptive Statistics**

<table>
<thead>
<tr>
<th>Interviewee Name</th>
<th>Age</th>
<th>Interviewee Name</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice</td>
<td>26</td>
<td>Kira</td>
<td>44</td>
</tr>
<tr>
<td>Betty</td>
<td>30</td>
<td>Linda</td>
<td>45</td>
</tr>
<tr>
<td>Carrie</td>
<td>32</td>
<td>Mary</td>
<td>45</td>
</tr>
<tr>
<td>Daphne</td>
<td>34</td>
<td>Nancy</td>
<td>45</td>
</tr>
<tr>
<td>Ellen</td>
<td>38</td>
<td>Ophelia</td>
<td>50</td>
</tr>
<tr>
<td>Florence</td>
<td>39</td>
<td>Patricia</td>
<td>50</td>
</tr>
<tr>
<td>Georgia</td>
<td>40</td>
<td>Rachel</td>
<td>52</td>
</tr>
<tr>
<td>Hattie</td>
<td>40</td>
<td>Sarah</td>
<td>54</td>
</tr>
<tr>
<td>Ida</td>
<td>41</td>
<td>Tonya</td>
<td>57</td>
</tr>
<tr>
<td>Josephine</td>
<td>41</td>
<td>Ursula</td>
<td>58</td>
</tr>
</tbody>
</table>

**Descriptive Statistics**

- Average Age: 43.05
- Median Age: 42.50
- Mode: 45.00
- Standard Dev.: 8.77

* Names used are not those of the actual interviewees.
Table 3

**Careers of Entrepreneurs Before and After Change**

<table>
<thead>
<tr>
<th>Name</th>
<th>Previous Career</th>
<th>Entrepreneurial Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice</td>
<td>Real Estate</td>
<td>Gift Baskets</td>
</tr>
<tr>
<td>Betty</td>
<td>Dancing Instructor</td>
<td>Dancing School</td>
</tr>
<tr>
<td>Carrie</td>
<td>Office Manager</td>
<td>Computer Secretary Service</td>
</tr>
<tr>
<td>Daphne</td>
<td>Secretarial Service</td>
<td>Secretarial Service</td>
</tr>
<tr>
<td>Ellen</td>
<td>Food Service</td>
<td>Catering</td>
</tr>
<tr>
<td>Florence</td>
<td>Engineering</td>
<td>Computer Hardware Design</td>
</tr>
<tr>
<td>Georgia</td>
<td>Marketing/Fund Raising</td>
<td>Marketing</td>
</tr>
<tr>
<td>Hattie</td>
<td>Advertising</td>
<td>Computer Graphics</td>
</tr>
<tr>
<td>Ida</td>
<td>Data Processing</td>
<td>Personal Computer Training</td>
</tr>
<tr>
<td>Josephine</td>
<td>Administration</td>
<td>Accounting Service</td>
</tr>
<tr>
<td>Kira</td>
<td>Elem./Secondary Teacher</td>
<td>Consultant for Site Planning</td>
</tr>
<tr>
<td>Linda</td>
<td>Education</td>
<td>Vocational Proprietary School</td>
</tr>
<tr>
<td>Mary</td>
<td>Human Services</td>
<td>Educational Services</td>
</tr>
<tr>
<td>Nancy</td>
<td>Property Management</td>
<td>Maintenance Service</td>
</tr>
<tr>
<td>Ophelia</td>
<td>Real Estate Sales</td>
<td>Mailing Services</td>
</tr>
<tr>
<td>Patricia</td>
<td>Clerical</td>
<td>Answering Service</td>
</tr>
<tr>
<td>Rachel</td>
<td>Sales</td>
<td>Retail Sales for Formal Wear</td>
</tr>
<tr>
<td>Sarah</td>
<td>Administration</td>
<td>Administration Support</td>
</tr>
<tr>
<td>Tonya</td>
<td>Music Teacher</td>
<td>Music School</td>
</tr>
<tr>
<td>Ursula</td>
<td>Science Teacher</td>
<td>Biological Science</td>
</tr>
</tbody>
</table>
majority of the subjects seemed to fall between the 2-year college degree, and the 4-year degree. Several had master’s degrees in education. One individual had two master’s degrees in electrical engineering in various types of electrical engineering. Several had certificates in specialized fields such as real estate. A few had completed high school but had not obtained college degrees. Table 4 lists the degrees and certificates the interviewees have earned.

Most of the subjects had been in their previous career field for over 15 years. A number of them had changed occupations, yet the career field appeared to remain the same. Some had indicated that while their family was growing up they were more or less locked into a specific position. Once the children matured, the interviewees found an opportunity to change from working for someone else to owning their own businesses.

**Educational Experiences Related to Entrepreneurship**

In each case, the interviewees discussed their backgrounds and accomplishments. They also described their use of learning from business courses, computer-related courses, courses involving oral and written communication, and other courses completed.

**Business Courses**

In respect to business courses, the participants stated that they had completed courses in accounting, marketing, high school bookkeeping, management, and a wide
Table 4

Degrees and Certificates of Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>H. S.</th>
<th>Assoc.</th>
<th>B.S./B.A.</th>
<th>M.S.</th>
<th>Ph.D.</th>
<th>Other&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice</td>
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<sup>a</sup> Other indicates a certificate from a community college, high or preparatory school in a specified area.

<sup>b</sup> Two X’s mean subject holds two degrees at the same level.
variety of other related courses. The common thread that surfaced throughout the interviews was the advantage of having taken bookkeeping and accounting. A small business owner in Pennsylvania, Kira, stated the following, "Accounting. The accounting gave me an inside track with other accountants." Many of the participants stated that with the accounting knowledge they were able to understand financial statements, which assisted them in their billing operations and helped them develop a collection policy in connection with their accounts receivable. In several cases, the participants stated that accounting helped them appreciably with customer relations because it enabled them to relate to the financial needs of their customers.

Marketing courses of various types were completed by several of the participants. It is noteworthy, however, that many of the subjects had not experienced these courses. Those that had completed marketing courses indicated that the courses helped them understand customer relations and increased their ability to obtain new business. Marketing knowledge also helped them create new strategies to gain additional business in addition to their existing customer base. The responses from the interviewees ranged from two extremes: "I haven't had any formal education in any kind of business" confirmed Florence at one end of the scale to "okay, quite a few of them" noted Georgia on the other end. Josephine, an associate in Pennsylvania made the following comment regarding marketing, "In my college marketing course, it looked at job marketing instead of the strategy of marketing."
Computer Courses

The second course area discussed during the interviews related to the participants' knowledge of computers. It ranged from knowledge of mainframe computers, to some computer programming, to an incomplete or insufficient knowledge of microcomputers and their applications. Linda said of her computer background, "I do not know anything about computers at all." Many stated that what they their knowledge about microcomputers was picked up from practical experience not from formal courses. In more than half the cases, formal courses had been completed some time ago and the coursework generally involved mainframe computers, which they felt was of little or no help in their current business enterprises. In support of learning from computer courses, Patricia noted, "Organization and in taking the computer course, I've learned how to organize and file."

Some interviewees indicated that they had learned something about computers from seeing other entrepreneurs work with them, but they indicated a need to have a greater knowledge of how computers could help in their businesses. Where they had access to a computer in connection with their individual businesses, they found that computers had helped them improve their customer base and keep records of their accounts payable and receivable. Also, computers helped them in storing database information for individual customers and indirectly helped them in their marketing efforts. Some of the participants indicated that they could not operate their businesses without having a computer available. A fledgling business owner, Hattie, stressed the need for computer software, "Had I not
learned how to do Desktop Publishing, I wouldn't have been able to pursue what I'm doing." If computers were not available, the entrepreneurs would lose a considerable amount of time and operating their businesses would be more difficult. Tonya observed, "If I had a computer it would help me in many ways, and I'm aware of that." The following are typical comments regarding computer courses: "So again, I haven't really taken any course, I've just learned it by doing, talking to other people," as mentioned by Florence; "The only course that focused entirely on the computers that I took was CIS, Computer Information Systems," said Georgia; or "I have never taken a computer course," stated Ophelia. Mark, a manager, commented about computers and software, "We have cooperated with some of the people in the area and they have helped us individually but not at the level we need." Another of Georgia's responses was, "They are the life's blood of my business." Of her educational background, Rachel stated, "I wish we could have had more computer courses."

Communication Courses

The third course area covered during the interview process is related to communications. The majority of the interviewees indicated that course work in English and public speaking had proven useful to them. Those with a college education or some college indicated that additional help was attained from freshmen English and literature courses. "Literature probably best helped me in my advertising to reach the people that are going to demand my services," revealed Rachel.
They all indicated that language skills, both oral and written, were essential to them in their businesses. Even those referring back to their freshman English courses in college, or even high school English, stated that communication courses helped them immeasurably in composing letters, memos, and communicating orally with customers. Related courses taken in college, such as speech fundamentals, were also found useful to these entrepreneurs.

The subject of oral and written communication, elicited a wide variety of responses. Some, at one end of the scale, had just those courses that one would normally take in a secondary school. Even those with baccalaureate and associate degrees had just the basic rudiments of typical college composition, literature, and perhaps a public speaking course. "English has helped me the most as we did do public speaking in the first year of college. We learned how to stand before people and talk, eye contact, hand contact, and all that," reflected Ellen of her past course work. The following are typical responses pertaining to written and oral communications: "Speech, Communications 101, is a standard required and is the class that I did take. I think it hasn’t changed in 20 years," Florence said of her past course work. One interesting reply was "I’ve actually not sat through any English literature or communication courses in college. So I credit that to my high school rather than my college," stated Georgia. Another response was, "I completed a speech, two speech courses, an introduction to speech and a public speaking class," said Ida.
General or Other Course Work

Philosophy, psychology, and history courses were cited during the interviews as other useful courses the interviewees had completed. Individuals that had completed psychology courses indicated specifically that these courses gave them a basis of understanding their relationships with their customers as well as understanding how to motivate their customers. Several stated that psychology was the most useful of the general courses that they had taken in college. Nancy answered, "Psychology, glad to answer your question. Dealing with an irate customer, when something goes wrong, I can listen, evaluate the situation and correct the problem." Daphne said, "Oh, the human behavior course is an excellent course because it helps you deal with your customers."

Individuals who had graduated from high school but had not taken additional college course work had not had the opportunity to study psychology. They, instead, cited history and similar courses in the general area to be indirectly helpful to them in their customer relationships. They felt, if nothing else, that some of these general courses enriched their background so that they could converse with their customers and be able to communicate on a more equal or comfortable basis. "I took a philosophy course in the very early stages of my college career that focused on social issues and how various schools of thought would respond with those social issues," Georgia said of her college course. Typing and business courses both in high school and college levels can also increase the entrepreneurs' productivity in the running of their businesses and doing paper work. "The typing skills are used with laying out and designing of newsletters; you really
do have to have a basic knowledge of the keyboard. When I was a one person operation, I could do everything because of my typing skills, it put me at ease with the computer," replied Ophelia of her use of typing ability. Carrie also mentions, "In my secretarial course, I took business a communications class that taught me how to write letters, what kind of punctuation that was appropriate for business letters."

Educational Concerns

Most of the fledgling business owners indicated that courses should be developed and taught in incubator facilities that pertain directly to small business operations. For example, in the areas of accounting and marketing, courses that specifically address problems, situations, and records required of small businesses are needed. In the area of management, similar situations to what would be taught in a standard management course should be taught but with the applications pertaining to small business situations, such as the ability of the manager to handle a number, if not all, of the functions of a business organization at one time. Ida noted, "I would like a course that specifically relates to things like, I guess paperwork, administrative kinds of things that had to do with being an entrepreneur." Incubator manager Helen said of Ophelia, "She can go further if she has some additional training or education in the basics of accounting and the use of financial statements as a management tool."
Delivery System Constraints

A major concern the interviewees identified was the delivery system of college courses designed for, or used by, people starting their own businesses. They pointed out that the times that the courses were offered were limited. For them, it was difficult to take a typical college course of 16 weeks. A number of trips during the day, or even in the evening hours, to a specific location can increase the amount of unproductive time. Courses infringed on time used for their businesses. They had to weigh just how much time they could afford to be away from their businesses to take specific courses even though, in all probability, the courses might help them in their future entrepreneurial endeavors.

The participants seemed to feel that the educational delivery system should be altered so that class sessions were longer allowing for fewer class sessions. Courses could be taught on Saturdays, or combination Friday evenings and Saturdays, or possibly even Saturdays and Sundays. Betty agreed saying, "I would prefer Saturday morning classes for me because I work all week, I work in the afternoons, and then take care of my child in the mornings, so Saturday mornings would be easier for me." Travel time would be decreased with fewer class sessions. Fewer classes of longer duration would also result in less time away from their businesses. The interviewees felt that colleges and universities should look at the possibility of having courses at the incubator facility itself. Both incubator members and people in the local community would find the classes more
convenient to attend. Alice stated, "Courses need to be more specialized. With the requirements you have on time, the course must be presented with as much information in the least amount of time." "Business people don't have a whole lot of time to devote to education and we know we have educational needs but we also have to fit that need whenever we can into our schedule," said Rachel of the situation.

Lack of Focus on Small Business Operations

A second major concern with available courses taken by the interviewees was that, in many cases, the courses were too general in nature or geared to large corporations or business entities. The entrepreneurs needed courses that addressed needs of small business owners who perform a number of functions at one time. They saw a need for courses designed for small business people, with examples from small businesses and problems encountered in small businesses addressed in the courses. Mary stated, "The formal education I had didn't prepare me in any way for knowing where to go with a small business." "I don't feel that they adequately trained us in how to deal with the employee problems," Rachel said of her business background. A computer course, rather than being generic, could be designed for the small business owner, thereby familiarizing the individuals with the hardware, software, and applications most useful for a person just starting out in a new enterprise. The interviewees felt that business courses designed specifically for the small business enterprise could enhance the productivity of the fledgling business. Carrie mentioned, "I mean you pretty much hit the ground running and you've
got to get going when you're an entrepreneur. There isn't a lot of time for learning curves, so I guess whatever the course is, I would think an intensive course which is fast paced is probably the first that I would take." Mary also said, "I have only had a computer to use for about four months now. Got one because of this business and so I desperately need computer training."

**Needed Education**

Throughout the responses the subjects expressed a need and an inadequacy in the area of both computer software and hardware. The interviewees had a wide variety of previous educational experiences particularly related to accounting, computers, marketing, and communications skills. The courses in these areas ranged from basic high school courses through educational experiences at the graduate level. A common trend that developed when reviewing the perceived needs was in each case a continuation of these previous experiences. Regardless of the amount of educational background in each of these areas, the individuals were desirous of additional instructional experiences in the these disciplines.

Particularly in the areas of accounting, computer skills, marketing, and communications, educational needs surfaced on the part of the participants in the study. For example, when asked about Florence's needs, Stephanie (her incubator manager) responded, "She has a strong background in engineering, but she needs courses in marketing, accounting, and financing to help her business grow." Further, Marsha, an
incubator manager, when asked, stated, relative to the general area of study, "Hattie needs to take self-improvement courses."

The individuals who had studied marketing wanted additional work in the same field, but in greater and specialized depth. In the area of computers, there was, regardless of previous experiences, the indicated need for more course work. While previous experiences in accounting had been mostly general in nature, the perceived needs were for specialized exposure in areas such as: accounts payable, accounts receivable, general ledger, financial statement analysis, and tax orientations.

A cohesive need seemed to emerge between past experiences and needed instruction. In reviewing the transcripts, the desire would surface for additional training in areas already covered, focused on small business.

**Computer Use for Business Women**

A third major concern that seemed to emerge was the desire to have courses designed specifically for the woman entrepreneurs, especially computer use courses. The need for more computer training was noted even by the interviewees who already made extensive use of personal computers in their everyday business activities. They expressed a need for both credit and noncredit courses in the computer area.

They also stressed that computer courses be of the hands-on type--ones that would allow them to work with the computer to increase information flow needed to operate their business enterprises effectively. Many subjects noted that they had not completed
any personal computer courses; instead, they had learned about computers themselves on the job or from friends. They described the situation as feeling completely deficient in this area and, in some cases, found this lack of knowledge to be hampering their businesses. Rachel voiced her disappointment saying, "I wish we could have had more computer courses."

They would like to see all types of computer courses offered with various types of software packages designed for small businesses. They are particularly interested in learning various software packages that have databases, spreadsheets, and other that are designed for the small business person. "I would like to be more knowledgeable with the Windows and other computer courses," stated Nancy. Sarah mentioned that, "I would like to upgrade my skills as the software is upgraded."

Some noted that they would be able to take the needed computer courses if the courses were offered on a short term basis of one or two extended class periods. Thus, they would not have to be away from their businesses for an extensive amount of time. As noted previously, the 20 entrepreneurs expressed a common concern about lack of time and the need to be as targeted as possible and to accomplish as much as possible within a relatively short period of time.

The interviewees who felt relatively skilled in the use of computers indicated that much of what they know about computers had been learned on their own. For example, one of the new business owners, Hattie, who does computer design and computer graphics, indicated that she needs additional instruction in various uses of the computer, particularly
in functions related to her business. She would like to have a much wider knowledge base of these particular applications. When asked about something she would like to improve, Tonya replied, "My computer skills are very weak and I probably need to keep up with the computer world."

Some entrepreneurs indicated that a course about computer hardware and related capabilities, with emphasis on computers suitable for small businesses, or more specifically for their type of businesses, would be helpful. This same group stressed the advantage in an incubator facility of having a computer laboratory available. The computer laboratory could be financed and supplied by either a community or local college or other educational institution. A chamber of commerce or other business entity may wish to provide these services. In this way, the participants in a business development center could have access to computer software and perhaps updated computer hardware that would be beyond their financial capabilities as individuals at the present time. Almost all of the fledgling owners, both in Pennsylvania and North Carolina, have the need for greater computer knowledge and computer course work and access to computers available to them. As technology increases, the need for this type of facility increases (Sublette, 1994). "I feel that I need to go back to school to continue my education in the computer field because of technology changes," said Linda of her interest in increasing her computer knowledge.
Time Management

Another concern that surfaced in many interviews was not having had a course or seminar that specifically addressed time management. "She needs time management to help her," said Ringo, incubator manager of the facility where Sarah is an associate. A number of the interviewees noted that managing home activities, their businesses, their social schedule, their children (if they still had children living at home), and their community activities took every bit of time that they had. Thus, they would like to use what time they have as efficiently as possible. They believed that they could accomplish more with the time available as well as perform the operations of their small business more efficiently. By using their time more efficiently, they hoped to lead a richer home life and have time for additional outside activities. "I would like to take a time management course if there's something like that set up to see if I'm basically doing or spending my time wisely," said Patricia when asked about her scheduling. Josephine reflected that, "I would say time management would be another area of weakness for me." All managers except Mark and George noted that the associates need to learn to better manage their time.

Communication

A common theme throughout the interviews was that much of what had been learned regarding oral and written communications was learned on the job, by doing or by observation. Most of the subjects indicated that additional education in communications
would be very helpful. For example, the interviewees needed help with speaking before
groups, doing sales presentations (particularly interviewees not having an associate or a
baccalaureate degree), and composing memos, letters, or other typical correspondence
used in a small business setting. Most had not completed formal collegiate level course
work in communications and felt that courses specifically designed for the small business
person and for the woman in business would be helpful. "Although I have gotten 'A'
grades for the challenged English or communication courses I took, I would like to have
more training in writing and in the use of the language," said Georgia of her
communication skills. In another location, one of the incubator managers, Paul,
mentioned that, "The associate seems to be shy or intimidated when it comes to that one-
on-one, face-to-face sales pitch to a prospective client." This associate had not had any
verbal communication courses.

In some cases, the entrepreneurs noted that they had difficult or complex letters to
write to their clients and a more extensive background in written communications would
be extremely helpful if not essential to the fledgling business owner. They felt additional
communication courses would be very helpful. Assertiveness training would also be
beneficial in this area as it would promote confidence. Ringo, the manager for Ursula
states, "In terms of management of her business, I would say that her greatest shortcoming
is that she tends to be too nice in some instances to her companies and her clients. It
could possibly put her in a financial strain at some point if she doesn't learn to be more
assertive." Betty also mentioned, "I think I need to take a general communications course.
I know I need to take writing courses again for business letters on how to word them, just the thought process, how to put it together, and complete it." One of the incubator managers, Marsha, believed that for Hattie, "She needs self-development because she does not mix well with people, possibly some public speaking course will help her grow in confidence."

Accounting

In accounting, many had completed some course work in bookkeeping and basic accounting, either in high school, community college, or in some cases at four-year institutions. In general, the feeling was that they could use additional preparation in accounting. A particular interest was shown in being able to understand, work with, and prepare different types of financial statements and budgets. Florence noted, "I had heard about balance sheets, and I had heard about income statements, and I heard that they were pretty important, but I had no idea what went in them and I had no idea why they were important. I had no idea what information could be contained in those two documents to help you understand how your business is doing." Many of the business owners were so busy with their small businesses that they left these things to their accountants to handle. Some intervieweees stated that they are dependent almost totally on their accountants. They would like to have additional knowledge in accounting so that they can talk more intelligently about financial operations and better understand financial statements of their businesses. They desired this knowledge even if they planned to continue with an
accountant. One area of accounting that surfaced as a particular need was transactions related to payroll preparation and payroll taxes.

Several interviewees stated that if they could take additional accounting courses they would like accounting courses specifically designed for small businesses. Most courses tend to be generic, or designed more for a larger or corporate type business structure. Ellen talks about, "I need accounting. Any kind of financial education and on computers because in the world these days everything is on computers. If I knew how to work the computer, I could get up my menus, budget, figure and calculate information saving me time." Sarah agreed with Ellen when she said, "Where I see that I can benefit from additional skills in accounting is learning more accounting software packages."

**Networking**

From the interviews, in Pennsylvania particularly, two interesting needs emerged. Peter, the manager of an incubator said, "Patricia needs to take courses in networking and human resources." Four individuals within one incubator noted the need for networking among the various participants in a facility. The four women entrepreneurs interviewed in this facility meet once a week to discuss common problems including marketing, purchasing materials, and transportation that are key to the conduct of their businesses. In addition, the four businesses are complementary to each other so the entrepreneurs had merged their advertising into one effort.
Four of the business owners; Georgia, Kira, Carrie, and Ida; by sharing a booth at chamber of commerce events, trade shows, and in other similar ways, extend the advertising available to their businesses. Further advertising costs are reduced by including all four businesses in the same promotion. The interviewees felt that for female owned businesses the necessity to be able to project oneself and be able to merchandise well at trade shows and other type of expositions was critical. Kira established that she needs more, "Networking. My education gave nothing as far as even what networking is, how to do it. Networking is probably one of the most important things to a business and I really had no idea how to network." Carrie noted, "As far as being a woman and in our environment in our community, I think networking is an area that is not real comfortable for women entrepreneurs. It's a new area to women. They have to meet with mostly men. Most of the environments that I'm in I go to meetings and it's mostly men there and women are intimidated by that, especially if this is new to them." To continue, Ursula said, "As entrepreneurs are consumed with their own individual purposes, the support structure needed is not there. One of the things you find, particularly as a woman entrepreneurs, there's not a great support system because most of the other people you run into are men. Having a mentor, just the fact that there is somebody that they can ask an opinion of who you don't feel like you are imposing upon, who shows an interest in them, and help the entrepreneur form a work network would be great to have. Knowing there is assistance if and when needed is a nice feeling."
Chapter Summary

The interviews with 20 women owners of fledgling businesses, in both Pennsylvania and North Carolina, indicated that these individuals made a change from employment to owning their own businesses at middle age. Three measures of central tendency, mean, mode and median, revealed that the change occurred at approximately 45 years of age.

These individuals had been involved in their previous career for a 10- to 20-year span, often changing jobs within a similar career area. In a few cases, radical career changes were made. The education ranged from high school graduation to Ph.D. Most of the entrepreneurs had completed 2 to 4 years of college. Those with only high school diplomas usually had some post secondary, collegiate, or proprietary school course work. In two cases, the individuals had substantial course work competed toward a baccalaureate degree but had not as yet attained that goal.

In the area of perceived educational needs, computer courses that stressed small business applications surfaced as a universal need among the interviewees. The need for accounting, including statement analysis skills, along with marketing, assertiveness, and time management emerged as the most critical areas.

Course structure seemed important, including length, method of delivery, and style. The interviewees noted that courses need to be offered on a more intensive basis so that travel time to and from class sessions would be decreased. In some cases, the desire to have course work within the incubator facility was expressed. College courses were found to be too generic in nature and not to focus on small business operation concerns.
All 20 of the subjects stated that they perceived a need for additional education. Further, they indicated that some time during their careers as small business owners they would seek additional educational background when they perceive it is needed.

Interviews with incubator managers or executive directors, in almost every case, supported the information the business owners provided. The needs the incubator managers stated were the same as expressed by the fledgling business owners. Also, the managers seemed to have extensive knowledge of the strengths and weaknesses of each one of the associates. Thus, the incubator manager interviews provided triangulation of information collected.

The researcher believed that it was helpful that incubators with less than 15 or 16 associates were chosen for the study. In checking with larger business development center facilities, the researcher found that the managers did not have the needed personal knowledge of the participants in their facilities. The participants were eager to continue developing the businesses that they had started and were pleased with their accomplishments thus far.
CHAPTER 5

SUMMARY, DISCUSSION AND IMPLICATIONS,
AND RECOMMENDATIONS

A summary of the study is presented in this chapter and further discussion of the findings and recommendations are provided.

Summary of the Study

The specific focus of this study was to determine the perceived educational needs of female entrepreneurs who were in the process of developing their own business in a businesses development center, commonly called an incubator. This study, therefore, served two purposes:

1. To examine various educational experiences women entrepreneurs deem related to business success in an incubator setting.

2. To examine educational needs not adequately addressed for women entrepreneurs in an incubator setting.

Few research studies on female entrepreneurs who had made the change from an employed career to opening their own business had been completed. An extensive amount of research was located dealing with the general topic of entrepreneurs. Research was
also available on business development centers, particularly in the 1980s when the concept was relatively new.

The earlier research was not focused on women entrepreneurs but rather focused on entrepreneurs in general. The earlier research base was further limited in that it did not address the educational experiences and perceived educational needs of entrepreneurs as they were going through the business development or incubation process.

Currently, the trend is for women to leave the general labor market and open their own businesses, according to Cole (1989). With the development of incubators across the country that promote this type of economic development, including those in states like Pennsylvania, North Carolina, and Virginia, the trend is likely to continue. In the years ahead, more business development centers will most likely open throughout the U.S. and in other countries as mentioned by Lunsford (1995). Thus, the increasing number of women entrepreneurs in these facilities should continue.

Accordingly, this research focused on the perceived educational needs of women entrepreneurs in business development centers. Twenty subjects were selected who responded to semistructured interview questions. In addition, interviews were complete with eight incubator managers or executive directors. All of the participants volunteered to participate in the study. For purposes of describing the entrepreneurs interviewed, demographic information was obtained including age, education, and business experiences.
Data Collection Procedures

The subjects for the study were all located in business incubator facilities and came to the attention of the researcher through personal contact with incubator managers or executive directors and through personal telephone contact. The interview guide was divided into three parts: demographic information, educational experiences of the entrepreneurs, and needed education. The interview instrument was based on an extensive review of the literature and personal experiences of the researcher with associates in an incubator setting. The interviews either took place in a board or conference room of an incubator facility or in the individual's office or business area. Many of the interviewees felt more comfortable having the interview in their place of business, in familiar surroundings. The interviews lasted from 1/2 hour to 1 hour and 15 minutes, depending upon the interviewees' responses.

To provide for triangulation, the executive directors of the business development facilities were also interviewed. The statements of the executive directors when compared to the comments provided by the associates helped establish the congruity and continuity of information collected from the entrepreneurs.

Data Analysis

Data gathering from interviews is the purpose of a qualitative evaluation. The findings in chapter 4 are the result of the data collection process. Analysis of qualitative data of the type collected for this study consists of three simultaneous flows of activity: data
reduction, data display, and drawing implications. After the process was completed, compilation and analysis of data helped identify similarities across the 20 individual interviewee transcripts. Differences were also noted as each of the interview transcripts was carefully examined. Unique experiences were also identified, particularly if they appeared to be dominant in the interview.

**Interviewees' Characteristics**

The review of the transcripts and the demographic data contained therein indicated that the average age of the new business owner was 43.05. The interviewee had been employed for over 15 years prior to making the decision to open her own business. In many cases, the new businesses were in a field similar to the one where they were employed prior to becoming entrepreneurs.

Their previous vocations provided experience and gave depth of knowledge to the businesses being developed. The individuals came from all socioeconomic levels which is based on previous education, occupation, achievement, and location.

**Interviewees' Educational Experiences**

From analysis of the interviewee transcripts there were five common areas of educational experiences. The entrepreneurs indicated that computer, marketing, management, accounting, and communication skills were helpful in founding their businesses.
The individuals indicated almost universally that their knowledge of computers was important throughout their business operations. In many cases, the subjects did not have formal computer training either in the use hardware or software, but learned while working. Those interviewees who had marketing training found it useful in sales and advertising.

Accounting assisted the small business owner with general ledger, payroll, accounts receivable, and accounts payable functions. In almost every case, the entrepreneurs noted that accounting knowledge was helpful to the operation of their businesses.

Also useful was education the entrepreneurs had in communications, both written and oral. The participants reported that they used communication skills learned in the past on a regular basis. In the general education area, some stated that psychology and similar courses assisted them with customer interaction.

Interviewees' Educational Needs

A review of the interview transcripts revealed a couple of prominent educational needs. For example, one was the lack of any focus of most business courses on small business operations and needs.

Course work in a variety of business subjects focused on large businesses, including the structured organizational climate of large businesses. Needs of the small business owner who has to perform many functions at one time appeared to be completely left out or only covered on a very minimal basis in the courses.
A second educational need was the structure of the courses and the instructional delivery system. It was felt that courses for entrepreneurs should be offered on an intensive basis so owners would not have to take so much time away from their businesses in traveling to and from the class locations. Further, intensive sessions, scheduled Saturdays or evenings, were needed so that less time would be taken from the interviewees' businesses. Longer sessions may be required to cover the materials needed by the entrepreneurs. The respondents indicated that instruction within the incubator facility itself would be very helpful. Thus, less time away from their businesses would be appreciated.

Specific Educational Content

The following four areas were mentioned in chapter 1 as needs in which an entrepreneur would want more knowledge (Wibben, 1988). The first area was computer knowledge, a major concern to the entrepreneurs. All 20 interviewees stated that they needed the use of a computer in their business operations and needed courses, seminars, and other types of instruction to increase their computer knowledge and ability to use computers effectively. There was a strong desire expressed by the interviewees to have a computer lab located within the incubator facility.

Time management as a second area where instruction was needed. The female business owner has to manage her business and, in addition, has home responsibilities that need to be addressed. Therefore, wise use of time for all segments of the individual's daily life is
extremely important. Time has to be carefully scheduled and managed. A number of the entrepreneurs expressed a need for help with time management.

A third specific content area need was communication, both oral and written. For example, written presentations, particularly those pertaining to marketing, were of the utmost importance. Courses addressing this concern directly were needed and they should be geared specifically to the small business owner. The small business owner has to work with a number of different types of correspondence related to the daily business management duties. This would include memos, letters, and collection notices.

The fourth area mentioned was small businesses accounting, all of the interviewees' businesses involved general accounting procedures. The development of appropriate financial statements, budgets, projections, and other financial reports are crucial to small businesses. Therefore, accounting course work is needed by small business owners.

**Networking**

Several of the fledgling entrepreneurs interviewed felt the need for personal networking with other new entrepreneurs. This reinforces the earlier reference to networking in "Office Options" (1987) mentioned in chapter 2 which supported the need for beginning entrepreneurs to network. If the services and functions of multiple businesses were complementary, the owners could network marketing and other activities to lower costs. The need for beginning entrepreneurs to network was also supported by Kang (1991), Lichtenstein (1992), Stone (1989), and Temali, (1984).
Discussion and Implications

Past educational experiences were identified by the entrepreneurs interviewed as being helpful to them in starting their small businesses as noted by Glenn (1986) and MacDonald (1985). For example, accounting was helpful for handling payroll, financial statements, records, and meeting other financial requirements of small businesses as Wibben (1988) had previously suggested.

The marketing courses assisted them in understanding how to develop their product or service and in gaining acceptance of it in the community or area of operation as cited in the literature review (Brodsky, 1989; "Female Entrepreneurism", 1994; Wells, 1994). Further, computer courses the subjects had taken were identified as helpful. Without exception, all 20 participants indicated that it was necessary to have a computer and to be able to use computer applications to operate their business entities.

Some interviewees experienced difficulty with microcomputers because their exposure to computers had been during the mainframe era. Thus, they lacked proficiency with micro or personal computers as we know them today. All 20 of the entrepreneurs showed an expressed interest in additional computer education. Business educators should be aware of this need and develop as quickly as possible a delivery system for computer use instruction as noted by Sublette (1994). New software applications geared to the needs of the small business owner are constantly being updated and need to be presented to the female small business entrepreneur.
Other education experiences that the entrepreneurs mentioned and found helpful were English, public speaking, fundamentals of speech, and other courses that assisted in their communications with customers, and other communications related to operating their small businesses. This finding supports Wibben's (1988) findings. Communication skills helped the entrepreneurs relate ideas, concerns, and needs with their customers and suppliers. Courses, including psychology, were cited as providing a background that helped them deal with difficult people.

Most educators need to be aware that instruction they provide may well relate to future needs of fledgling entrepreneurs and can help them overcome barriers from the lack of earlier education, as noted by Bartlett, Poulton-Callahan, and Sommers (1982) and Larkin (1993). They can enhance their instruction for future entrepreneurs by providing courses that address entrepreneurial needs as identified by Wibben (1988). Instruction in accounting, financial statement preparation, budgets, and other types of financial analysis should be geared to the small business owner. Courses should be designed so that what is learned can be quickly adapted to individual entrepreneurial needs. Likewise, marketing and public relation skills should be adjusted to the small business entrepreneur. This would allow for developing market potential as quickly as possible. Courses in selling and communication are also important.

Due to the enormous amount of software available on the market today, training on particular software would be close to impossible. Instruction on the general use of word processors, spreadsheets, and databases could still be accomplished. Training in the
computerized accounting area should also be emphasized in the present accounting courses.

Educators need to develop courses that are as accessible as possible to the small business owners, as discussed by Heiman (1986). For example, community colleges, four-year colleges, or other institutions could provide a computer lab for delivery of instruction within the incubator facilities themselves, as suggested by Sublette (1994).

The computer lab should contain the latest in computers and specific software designed for the small business person. As business owners pointed out in the study, the more time saving computer functions they can use, the more time they have for other business concerns. They would also have more time for marketing, developing their product and service lines.

It is important for the small business owner to reach the break-even point as quickly as possible. Most incubator facilities have required business plans and periodic reviews of the small business owner to ensure that this is accomplished within a reasonable amount of time. To assist the owner in determining when the break-even point will be reached, computer hardware, software, and use expertise would be most helpful.

Supporting Wibben's (1988) findings, psychology, management, and human relations courses, when applied to the small business, also appeared to be helpful. Those individuals who stated that they had taken these courses found them to be worthwhile. Therefore, a need exists to develop these courses so they are aimed at small business operations and concerns.
Recommendations

Based on the findings of this study, the researcher provides the following recommendations for educators programs and for future research:

Recommendations for Educators

1. A greater focus should be given to computer needs of small business entrepreneurs as proposed by Sublette (1994). This focus would help the entrepreneurs develop computer hardware and software knowledge of this constantly changing technology.

2. Another important focus would be software applications, particularly those related to the accounting needs of small businesses. This software should include payroll, general ledger, accounts payable, and accounts receivable features. Findings of this study support those of Wibben (1988) in regards to the need for software applications expertise.

3. Computer laboratories or centers need to be available in business development centers where there is a concentration of new businesses. These laboratories, as Sublette (1994) states, would facilitate on-site instruction in software applications and introduction to various types of hardware and systems. As technology increases, additional opportunities can be provided for entrepreneurs to use computers.

4. Women entrepreneurs starting new businesses need marketing and sales
skills as well as help with assertiveness as suggested by Barlett, Poulton-Callahan and Sommers (1982), Glenn (1986), and MacDonald (1985). Instruction focusing on these needs would be of value to entrepreneurs.

5. Human relations skills should be emphasized in courses designed for small business entrepreneurs. These skills could be included in courses pertaining to management, psychology, sociology, human resources, and marketing. This supports Wibben's (1988) suggestions.

6. Women entrepreneurs need help with time management, including scheduling techniques. Thus, instruction in these procedures should be provided as indicated by Applegate (1992), Collins (1983), Goldberg (1989), Hiss (1992), Olinger (1989), Still (1991), and Wibben (1988).

7. Classes and seminars should be available to entrepreneurs at their incubator facility. These classes would save considerable time and effort which the owner could devote to her business enterprise. With this type of delivery system, additional time can be devoted to instructional pursuits, as discussed by Wibben (1988). More intensive instruction aimed at small business issues could be scheduled on Friday nights and Saturdays.
Recommendations for Further Research

1. This study should be repeated with small business owners who are males to determine if differences exist in their perceived educational needs compared to those of female entrepreneurs as examined in this study.

2. Participants in this study could be followed up in five years when they have graduated from the business development center and are operating businesses on their own. The research could determine if they did complete additional studies as intended and the areas of study which influence entrepreneurial success.

3. A similar study should be done with younger entrepreneurs, both men and women, to see if their perceived educational needs are similar or whether there is more emphasis in specific areas.

4. More research is needed to examine what additional educational experiences would be helpful in the entrepreneurial experience both within and outside the incubator environment.

5. Major corporations have had layoffs at all levels, creating a desire by many individuals to start their own businesses, as mentioned previously by Blair (1987), Cole (1989), and Wells (1994). Examining how these displaced workers adapt to the small business environment should help identify educational needs they have.
REFERENCES


Female entrepreneurship soaring around the globe. (1994, December 12). USA Today, 10.


APPENDIX A

PERCEIVED EDUCATIONAL NEEDS

QUALIFYING INSTRUMENT
Qualifying Instrument

(Phone Contact)

1. May I have your first name?  ________________________________

2. Do you consider yourself to be a female entrepreneur?  ________________________________

3. Are you currently an associate in a business incubator?  ________________________________

4. How long have you been an associate?  ________________________________

5. In what city and state do you operate within the incubator?  ________________________________

6. What is the nature of your business?  
   ________________________________
   ________________________________
APPENDIX B

PERCEIVED EDUCATIONAL NEEDS

INTERVIEW INSTRUMENT FOR ASSOCIATES
INTERVIEW INSTRUMENT

Name: ___________________________ Date: ________________

Location: ___________________________ Time: ________________

Mrs./Ms. ___________________________ as I have already mentioned, I am conducting a study focusing on the perceived educational needs of women entrepreneurs in an incubator setting. A major part of this study involves travel to various locations in the mid-Atlantic states where interviews are conducted with women who are involved in this type setting. Do you have any questions you care for me to address?

Before the interview begins, let me assure you that your responses are confidential. So that I will not misinterpret information you provide, do you mind if I record the interview? _____ (If no) If there is anything you would prefer I didn't record, please let me know and I will turn off the recorder.

Is it all right for me to turn on the recorder now?
Part I

Demographic Information

Age: ________________________________

Previous business experiences: ________________________________________

______________________________________________________________

Educational experiences: _________________________________________

______________________________________________________________

Degrees earned: _________________________________________________

______________________________________________________________

Professional certification: _________________________________________

______________________________________________________________

Other education: ________________________________________________

______________________________________________________________
Part II

Educational Experiences Related to Entrepreneurship

1. Now, please think about your formal education experiences and name the business courses you completed.

   ___________  ___________  ___________
   ___________  ___________  ___________

   Select one course from those you listed that you feel best helped you as an entrepreneur.

   For that course, please give a specific example (event/time) when you used something you learned in the course that help you as an entrepreneur.

   What happened? Who was involved? What was the outcome?

2. Which courses involving computer related skills have you completed?

   ___________  ___________  ___________
   ___________  ___________  ___________

   Select one course from those you listed that you feel best helped you as an entrepreneur.
For that course, please give a specific example (event/time) when you used something you learned in the course that helped you as an entrepreneur.

What happened? Who was involved? What was the outcome?

How do computers impact on your entrepreneurial endeavors?

3. Which courses pertaining to written and/oral communications have you completed?

__________________________ ________________ ________________

__________________________ ________________ ________________

Select one course from those you listed that you feel best helped you as an entrepreneur.

For that course, please give a specific example (event/time) when you used something you learned in the course that helped you as an entrepreneur.

What happened? Who was involved? What was the outcome?
4. What other courses have you completed that have helped you as an entrepreneur?

Select one course from those you listed that you feel best helped you as an entrepreneur.

For that course, please give a specific example (event/time) when you used something you learned in the course that helped you as an entrepreneur.

What happened? Who was involved? What was the outcome?
Part III

Needed Education

1. Now, I want you to reflect on your educational needs and experiences as an entrepreneur. This time, I would like for you to tell me about two separate events/instances when you felt your education did not adequately prepare you to meet the challenges you have faced as an entrepreneur.

For the first one:

What happened? Who was involved? What was the outcome?

For the second one:

What happened? Who was involved? What was the outcome?

2. What do you perceive to be your educational needs at this time?
APPENDIX C

INTERVIEW INSTRUMENT FOR INCUBATOR MANAGERS
MANAGER INTERVIEW INSTRUMENT

Name: ___________________________     Date: _______________

Location: ___________________________     Time: _______________

Associate's Name: ___________________________     

For women entrepreneurs interviewed at this incubator, I would like you to share information with me regarding your perception of the educational needs of each.

1. Reflect on your associate's needs and experiences as an entrepreneur. I would like you to tell me about two separate events/instances when you felt her education did not adequately prepare her to meet the challenges to be faced as an entrepreneur.

For the first one:

What happened? Who was involved? What was the outcome?

For the second one:

What happened? Who was involved? What was the outcome?

2. What do you perceive to be the associate's needs at this time?
APPENDIX D

PANEL FOR VERIFICATION OF ACCURACY OF
TRANSCRIPTS AND LETTERS FROM THEM
V. Lee Cobb  
Director of Economic Development  
City of Lynchburg  
P.O. Box 60  
Lynchburg, Virginia 24505

Catherine C. McFaden  
Executive Director  
Business Development Centre  
147 Mill Ridge Road  
Lynchburg, Virginia 24502

James C. Quist  
President  
Mountain Marketing Assoc. Inc.  
P.O. Box 912  
Lexington, Virginia 24550
TO WHOM IT MAY CONCERN

This will verify that I, the undersigned, have reviewed by listening to two interview tapes along with the transcript conducted by Mr. William Heath.

After having compared the transcripts with the interview tapes, I conclude that each transcript prepared by the original investigator is an accurate representation of the interview contents. Based upon this conclusion, I feel that the transcripts are accurate.

Sincerely,

[Signature]

V. Lee Cobb
Director
November 7, 1995

TO WHOM IT MAY CONCERN

This will verify that I, the undersigned, have reviewed by listening to two interview tapes along with the transcript conducted by Mr. Bill Heath.

After having compared the transcripts with the interview tapes, I conclude that the transcript prepared by the original investigator is an accurate representation of the interview contents. Based upon this conclusion, I feel that the transcripts are accurate.

Sincerely,

[Signature]

Catherine C. McFadden
Executive Director
October 18, 1995

To Whom It May Concern:

This will serve to verify, that I, the undersigned, have reviewed both the recorded interviews and the transcripts thereof provided by William J. Heath. These interviews were conducted in the course of preparing his dissertation for consideration of a doctorate through Virginia Polytechnic Institute and State University.

I have concluded after review that the written transcripts are an accurate representation of that which was recorded on audio tape.

I look forward to reading the completed document on women entrepreneurs. It should prove to be an effective and useful study in the world of marketing.

Sincerely,

James C. Quist, President
MMAI/QAHI Incorporated

*Effective 10/20/95 our new address & phone numbers are: Bluegrass Trail, #308 B, Lexington, VA 24450 - (540) 463-4081 (correct) and fax (540) 464-8083.*
VITA

William John Heath was born February 28, 1932 in Bayshore, New York. He was graduated from Hempstead High School in Hempstead, New York, in 1951. He was a commercial banker for a number of years before making a decision to pursue a life-long desire to teach. This decision was made in 1982.

He received a Bachelor of Science degree in history and sociology from the University of the State of New York in Albany, New York in 1976. The author also received a Bachelor of Science in business administration from the same institution in 1978. He further pursued graduate education at James Madison University in Harrisonburg, Virginia, receiving his Master of Business Administration degree in 1982. William John Heath received a certificate of Advanced Graduate Studies in Vocational Education from Virginia Polytechnic Institute and State University in Blacksburg, Virginia, in 1992. At present the researcher is professor of business management at Central Virginia Community College in Lynchburg, Virginia.

He has also been active in the Lynchburg Business Development Centre, serving as Vice Chairman of the Board of Directors, Chairman of the Incubator Committee, and serving on various committees for the last 8 years. He is a member of Delta Pi Epsilon and Phi Delta Kappa. He lives in Brownsburg, Virginia, with his wife Jo.