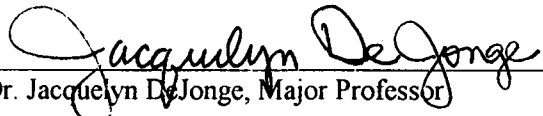
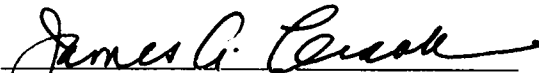


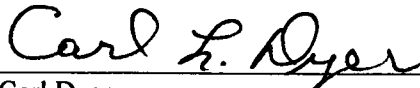
To the Graduate Council:

I am submitting herewith a dissertation written by Phyllis Elaine Bell Miller entitled "Future Hiring Practices & Required Competencies for Professional Positions Within the Apparel Industry." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Human Ecology.


Dr. Jacquelyn DeJonge, Major Professor

We have read this dissertation
and recommend its acceptance:


Dr. James Crook


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Associate Vice Chancellor
And Dean of the Graduate School

**FUTURE HIRING PRACTICES
& REQUIRED COMPETENCIES
FOR PROFESSIONAL POSITIONS
WITHIN THE APPAREL INDUSTRY**

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Phyllis Elaine Bell Miller

August 1995

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ABSTRACT

The purpose of the study was to determine the future hiring practices and required competencies for professional positions (those requiring a bachelor's degree) within the U. S. garment industry. Telephone interviews were administered to persons responsible for recruiting and/or hiring college graduates for 91 firms, which were randomly selected from the membership of the American Apparel Manufacturers Association (69% response rate). The sample companies represented all sales volumes, sizes, apparel categories, and geographic regions.

Manufacturers' opinions of the level of industry preparation provided by college programs, of faculty awareness of industry's needs, and of the value of faculty as resource persons for industry were generally low. In all cases, four-year colleges received higher ratings than two-year colleges.

In the near future, 56% of the manufacturers planned to hire at least one college graduate and 41% planned to hire two or more graduates for positions in areas other than accountancy and finance. Most positions were in management and sales. The majors in greatest demand were business, marketing, computer science, apparel production, and engineering. Manufacturers favored majors related to apparel and home economics significantly less than other majors. A significant number of manufacturers also said that they would consider hiring someone without a bachelor's degree for the positions mentioned.

Manufacturers rated 37 apparel-related competencies, 16 support or minor competencies, and 16 personal competencies on the basis of their importance for the next-available professional position. Personal skills received significantly higher ratings than content (apparel and support) competencies, and support competencies rated significantly higher than apparel-related competencies. Although competencies in oral and written communications rated significantly higher than content competencies, they did not rate significantly higher than other personal competencies as

a group. The highest-rated competencies were teamwork, listening, motivation, problem solving, and leadership. The highest-rated apparel competencies were computer applications, costing, industry internships, garment quality evaluation, and apparel production assembly processes. Company size, sales volume, and product type did not significantly affect the ratings. Thus, persons aspiring to careers in the apparel industry should be motivated, acquire a broad-based education, and possess excellent problem solving, communications, and people skills.

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CHAPTER I

INTRODUCTION

In today's rapidly changing environment, higher education is undergoing a metamorphosis. Factors that affect the manner in which colleges and universities position themselves for the future include changing national and world demographics; declining enrollments; a changing student population with a variety of life styles; a dynamic, increasingly competitive job market; an evolving, global economy; rapid technological advances; expanded global awareness and interaction with other cultures; a growing concern for environmental issues; and a heightened sense of political and community involvement with issues related to crime and safety, health, and the overall quality of life (Bailey, Firebaugh, Haley, & Nickols, 1993; Conant, Brown, & Mokwa, 1985). As institutions strive to keep pace with changing conditions, they are challenged daily with decreased funding and increased program and service demands (Bailey et al., 1993; Conant et al., 1985; Haley, Peggram, & Ley, 1993). The pressure is on to enhance program viability and remain competitive despite the current economic crunch.

Efforts to cope with economic and social change are evident at both administrative and departmental levels. Most disciplines, including marketing, finance, public relations, and business, are reevaluating and modifying their curricula to attract quality students and to prepare them for the highly competitive job market of the future (Morgan, 1993; Ruhland, 1993; Samson, 1993; Smith, 1993). The challenge to maintain and enhance viability is nowhere more evident than in home economics/human ecology units.

Since its inception in 1862, home economics has undergone numerous changes that reflect conditions in society and in the economy (Byrd, 1990). In the early years, its primary audience was self-sufficient, rural families. The discipline then focused on researching and disseminating information about food preservation, home management, and the preparation of low-cost meals.

As the number of urban, working-class families increased, home economics expanded to include issues vital to city dwellers. Being increasingly dependent on the market place and spending less time at home, this group needed to know more about purchased goods and services. Topics of interest included nutrient quality and availability; time and motion studies; child-rearing practices; family clothing, housing, and food expenditures; consumer choices and satisfaction; and the wearability, durability, and washability of certain fabrics and garments, especially those composed of newly developed fibers (Byrd, 1990; Davis, 1993).

Beginning in the late 1960s, home economics shifted its emphasis from the general goal of preparing people to deal with their home and social environments to the specific goal of equipping people with the skills and knowledge to analyze and change their environments (Rudd, 1981). In order to remain viable as emphasis shifted away from the home and as more women entered the work force, home economics began to prepare students for careers. This was probably an attempt to attract and maintain the enrollments of women who needed an education that would lead to employment. A review of recent college catalogs reveals such occupational specialties as dietetics, food processing technology, food inspection, food service and restaurant management, gerontology, interior design, entrepreneurship, environmental research and conservation, family counseling, and professional child care. Thus, home economics expanded its consumer group to include businesses as well as families (Lind, 1989; Rudd, 1981).

The original clothing and textiles programs also concentrated on the needs of families, providing instruction on the construction, selection, and care of clothing for family members and for

personal consumption (Lind, 1989). Today, these programs almost solely provide preparation for professional careers, including fashion design, apparel production, retailing, merchandising, textile economics and world trade, textile science, quality control, visual merchandising, and fashion promotion and marketing.

Many home economics units have undergone name changes to better reflect their career-oriented focus and, possibly, to cast off the past stigma of being more vocational than scholarly. An American Home Economics Association (AHEA) study of all known home economics units in higher education revealed that 115 (58.8%) of the 191 units surveyed used names other than home economics (Haley et al., 1993). The survey reported the use of at least 48 different names, the most popular of which were human ecology, human environmental sciences, family and consumer sciences, and human resources. The number of name changes has increased steadily in recent years, with 90 changes occurring since 1983 and 48 occurring since 1989 alone.

Names changes have also occurred at the national level, severing traditional ties with "home economics." In 1994, AHEA changed its name to the American Association of Family and Consumer Studies (AAFCS).

Despite efforts to upgrade the profession's image and focus, several units associated with home economics/human ecology have been closed or dismantled, with some components being discarded completely and others being absorbed by other departments (Bailey et al., 1993). Factors contributing to the demise of these programs include:

- failure to formulate and articulate a viable mission or vision and the inability to gain the support and commitment of faculty and campus administration;
- failure to identify priorities and to concentrate resources on the development of areas of strength;
- failure to identify and eliminate areas of weakness or obsolescence;

- diminished quality, currency, and efficacy of programs over time;
- inadequate leadership;
- faculty whose skills did not keep pace with changes in the profession or did not make them competitive with faculty in other disciplines; and
- internal faculty strife (Bailey et al., 1993; Lind, 1989).

Departments dealing with clothing and textiles also face the threat of extinction. Lind (1989) points out that, for some time, university administrators have questioned the viability of clothing and textiles programs. The adequacy of individual professors is also scrutinized, especially when many do not hold Ph.D. degrees and are not active in recognized forms of research and publishing. When universities must counteract declining enrollments and severe budget constraints, these programs and faculty are prime targets for elimination.

Some clothing and textiles programs lack viability because of courses that remain in the curriculum solely because faculty members are comfortable teaching them (Lind, 1989). Kendrick (1993) also notes that a large portion of curriculum design and development is done by individual faculty members working alone or in small groups, without regard to existing social and economic conditions. This writer has observed that the main resources for many curricula are catalogs from other institutions—not input from the business sector. In an effort to keep up with competitors, some departments implement curricula without having adequate faculty, equipment, or other resources to assure success. The task of building total quality into the curriculum and assuring longevity clearly requires a new approach (Kendrick, 1993).

Re-engineering the University & Curriculum to Meet the Challenges of the Future

In the 1970s and 1980s, many American businesses, including Monsanto, faced the same problems that confront institutions of higher education today (Doyle & Newbould, 1980; Mahoney, 1994). At that time, the bureaucracy and the needs of the corporation took precedence over the needs of consumers, who were often viewed as irritants. Companies maintained antiquated policies without question and paid many employees simply for "showing up." New technology and savvy competitors threatened to force many businesses into obsolescence.

Numerous companies survived by reinventing their corporations through the use of the marketing concept and strategic planning (Doyle & Newbould, 1980). The marketing concept is the business philosophy whereby the organization is oriented toward achieving its objectives through meeting the needs of the customers within its chosen markets. Management specialist Peter Drucker asserts that the only valid definition of business purpose is to create a customer (Doyle & Newbould, 1980).

Doyle and Newbould (1980) also point out that "the social and economic function of the firm is not to create employment, increase exports or push forward technological boundaries but simply to provide customers with the goods and services they want" (p. 258). Customer satisfaction is the sole source of corporate wealth, without which the enterprise itself will soon disappear. Whatever the firm's priorities, the creation and maintenance of customers are the bases of modern management and strategic marketing.

Educational institutions and departments that have applied marketing and strategic planning concepts have experienced similar success (Conant et al., 1985; Doyle & Newbould, 1980; Gales,

1994; Kotler, 1990; Mahoney, 1994; Shim & Morgan, 1990). For them, the needs of the consumers of higher education are the most important considerations when developing policies and programs.

Using the Marketing Concept to Focus on the Consumers of Higher Education

The concept of viewing students and businesses as the consumers of higher education and of considering their needs first is derived from a marketing orientation (Kotler, 1991). Because of the problems confronting higher education, institutions have been admonished to consider the marketing concept more seriously. However, many academicians continue to exhibit either the production orientation or the selling orientation (Conant, Brown, & Mokwa, 1985; Murphy, 1979).

The production concept holds that consumers will favor products that are widely available and low in cost. Managers of production-oriented organizations concentrate on high production efficiency and wide distribution coverage (Kotler, 1991). In the context of higher education, the production orientation is evident in institutions that emphasize scholarly research productivity and the development of new academic courses or programs (Murphy, 1979). Another effect is high student enrollments, which sometimes result from the lowering of academic standards in the effort to maintain adequate numbers (Brimlow, 1992). The many students attracted through the production orientation sometimes end up in overcrowded classes and are assigned to overworked advisors. While this management orientation generates large numbers of consumers, it is open to charges of impersonality and questionable service quality (Kotler, 1991).

The selling concept or orientation results in aggressive selling and promotional efforts (see Figure 1). The firm's aim is to sell what it makes rather than to make what it can sell or to make what consumers really want (Kotler, 1991). This is the most prevalent marketing strategy in higher education: Most institutions focus on their own needs first and consider students only as an input to

satisfying the institution's needs (Conant et al., 1985). As a result, most market research in higher education is directed toward the prospective student and upon recruitment activities. The marketing function is often limited to promotional programs, image building, and recruitment.

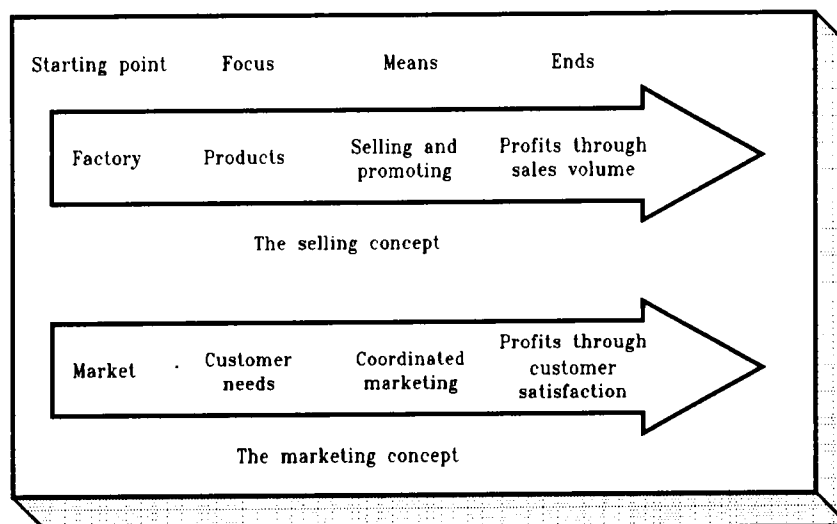


Figure 1 Model of the Selling and Marketing Concepts. Source: *Marketing Management: Analysis, Planning, Implementation, and Control* by Philip Kotler, p. 17. Copyright © 1991 by Prentice Hall Inc.

During the late 1970s, a marketing orientation seemed to emerge because of the end of the baby boom and changing governmental and societal priorities (Murphy, 1979). It rests upon four main pillars: a market focus, customer orientation, coordinated marketing, and profitability through customer satisfaction (Kotler, 1991). The model in Figure 1 is adapted from Kotler's model for the marketing concept. The process begins with a carefully-defined target market, which consists of consumers.

Murphy (1979) identified two major classifications of consumers of higher education: internal consumers and external consumers. The distinction is predicated on whether the educational

product is considered to be knowledge (i.e. education) or the graduate. For internal consumers, the product is knowledge. For external consumers, the product is the college graduate.

The internal consumers of education fall into four major subcategories: (1) future consumers (prospective students), (2) current consumers (enrolled students), (3) past consumers (alumni), and (4) dissatisfied consumers (students who dropped out or transferred). The external consumers of higher education include those who hire or otherwise use graduates—private industry, graduate and professional schools, government, and other nonprofit organizations. Research is essential to ascertain the exact nature of the external consumers. Although graduates are supposedly prepared for a particular career, they may actually find themselves following a different course.

After defining the target market, the institution attempts to ascertain consumers' needs from their own point of view. An assessment of the needs of both consumer groups is crucial when developing programs and policies. Research and consumer feedback can be utilized to determine how to improve curricula and services.

Coordinated marketing includes both external and internal efforts. External marketing involves cooperation among the various marketing functions—the sales force (recruiters), advertising, product management, marketing research, etc. Internal marketing is the task of successfully hiring, training, and motivating able employees to serve the customers. In education, this step consists of training existing faculty and staff or hiring new personnel to plan and implement the needed programs. Profitability or the achievement of organizational goals—whether they be profit, funding, longevity, or enrollments—is accomplished by satisfying customers' needs more effectively and efficiently than competitors (Kotler, 1991).

Using Strategic Planning in Higher Education

In addition to embracing the marketing concept, administrators and faculty are also increasing program viability through strategic planning. Kotler and Murphy (1981) define strategic planning as " the process of developing and maintaining a strategic fit between the organization and its changing marketing opportunities" (p. 471). Its long-run, comprehensive approach is much more strategic than traditional long-range planning. Figure 2 contains Kotler and Murphy's model for academic strategic planning.

Before new programs and curricula are developed, strategic planning should be implemented at each major institutional level. Thus goals and plans developed by the president and vice presidents, the deans, department chairperson, and faculty are all taken into account when new curricula are planned.

Because the environment constantly changes and, therefore, calls for new organizational strategies, the first step in strategic planning is to carefully analyze the environment. The goal of the environmental analysis is to gather information about the:

- *internal environment* (board of directors, administrators, faculty, and staff)
- *market environment* (traditional and nontraditional students, alumni, funding sources, employers, and graduate schools)
- *public environment* (the financial milieu, media, government, activists, and the local and general public)
- *competitive environment* (the nature of competitors and their strengths and weaknesses)
- *macro environment* (demographic, economic, technological, political, and cultural)

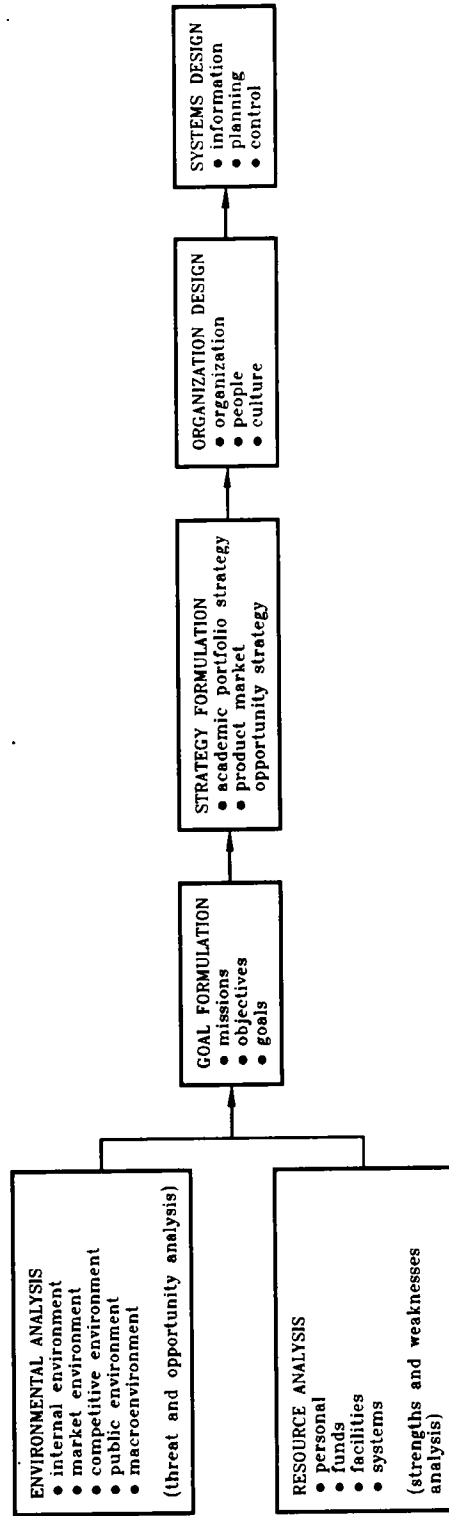


Figure 2 Strategic Planning Process Model. Source: "Strategic Planning for Higher Education," by Philip Kotler and Patrick E. Murphy, *Journal of Higher Education*, 1981, Volume 52, No. 5, p. 472. Copyright © 1981 Ohio State University Press.

The environmental analysis identifies major trends and their implications for the organization, creating an awareness of salient threats and opportunities. This enables the organization to formulate a documented picture of the most significant developments around which it must develop its goals, strategies, structures, and systems.

The results of the trend analysis are used to develop an opportunities-threats audit. Kotler and Murphy (1981) define an environmental threat as a challenge posed by an unfavorable trend or disturbance that, if left unchecked, could lead to the stagnation, decline, or demise of the organization or one of its programs. Institutions then assess the potential severity of each threat, the kind of loss it could represent, and the probability of its occurrence. Identifying and classifying threats allows the organization to determine which environmental developments require monitoring and further planning.

The opportunity analysis or audit identifies marketing opportunities—areas of relevant action in which the organization is likely to enjoy superior competitive advantages (Kotler & Murphy, 1981). The organization assesses each opportunity in terms of its potential attractiveness—as measured by the revenues or other benefits that it could generate—and the probability that the institution can successfully develop the opportunity.

Following the environmental analysis, the strategic planning process calls for a resource analysis. This investigation identifies the organization's strengths and weaknesses. Strategic planning theory recommends that an institution only pursue goals and opportunities congruent with its strengths and avoid those in which its resources are lacking. A resource audit or evaluation of the organization's staff, finances, and facilities is part of this step in the planning process. At this time, the organization identifies its distinctive competencies or differential advantages—the dimensions on which it can outperform its competitors. As an aid to evaluating its strengths and weaknesses, the

organization can also initiate image studies both inside and outside of the institution. These often reveal additional strengths and weaknesses of which the organization was unaware.

After reviewing the environmental and resource analyses, the organization is prepared for goal formulation. The first step consists of evaluating and possibly redefining the organization's guiding mission, which must accomplish something in the larger environment. To be effective, the mission statement must be market-oriented, feasible, motivating, and specific. Next, the organization develops objectives based upon the mission statement. Objectives of interest to a college might include increasing enrollments, enhancing its national reputation, and lowering its operating deficit. Depending upon which problems and opportunities arise, the objectives may vary from year to year. Finally, the institution restates its objectives as operational and measurable goals. The goal for enrollment, for example, would specify the desired percentage of increase.

After formulating its mission, objectives, and goals, the institution develops strategies that will enable it to achieve its goals. The academic portfolio strategy determines what the institution will do with its current products/programs. Each department and curriculum is evaluated in terms of its centrality to the mission, quality level, and market viability. A program's value may be determined in numerous ways, including evaluations by outside experts or independent agencies and tallies of the percentage of graduates who go on to graduate school or who are employed by national firms.

The institution also formulates a product/market opportunity strategy. During this process, it examines various types of expansion, such as outreach into new geographic areas, the development and modification of programs for existing markets, and the development of programs that will attract new markets. The resulting product/market opportunity matrix helps the organization to create and evaluate new options in a systematic manner.

During the process of organizational design, the institution takes steps to transform itself into a body that is capable of accomplishing the selected goals. These may include changing the

organization's structure or policies, hiring or retraining staff, and modifying the university culture (the way its staff thinks). Getting the staff to view education from a marketing perspective and to focus on consumer needs may be the most challenging task of all (Kotler & Murphy, 1981).

The last major step in strategic planning is to design or upgrade the systems that the organization needs to accomplish its goals. The marketing information system should be designed to provide the institution with the needed information about students, alumni, competitors, publics, and macro environmental forces. Administrators require this information to monitor environmental trends and to track their progress in achieving the institution's goals.

The market planning system provides a formal means of developing annual and long-term goals, strategies, marketing programs, and budgets at a regular time each year. An increasing number of institutions realizes that an organized, disciplined, regular effort is essential if the organization hopes to achieve optimal results in the marketplace.

The marketing control system monitors and measures ongoing results as the institution pursues its goals. If unexpected conditions arise, this system enables the staff to formulate contingency plans that allow it to counteract adverse conditions and to take advantage of new opportunities.

Along with strategic planning, educational institutions are adopting total quality management (TQM) techniques (Gales, 1994; Horine & Axland, 1992; Hubbard, 1994; Kendrick, 1993; Shalala, 1993). TQM involves developing strong, visible leadership, a clearly articulated mission, a knowledge of customer groups and their needs, and a focus on process improvements (Horine & Axland, 1992). Other measures include coalescing around core strengths, amalgamating or eliminating smaller programs, shaving curricula of duplication and minuscule study-area distinctions, out-sourcing, sharing support services with neighboring schools, forming partnerships

with business, and aggressive marketing with consumer-oriented incentives (Shalala, 1993; Gales, 1994).

Evaluating the Apparel Production Curriculum Through a Marketing & Strategic Planning Orientation

The value of the marketing concept and strategic planning extends beyond university and departmental levels. They are also useful tools for developing individual curricula. Although the home economics/human ecology literature contains many references to strategic planning, there is little evidence that it has been used to determine the viability of the apparel production specialty. The choice of apparel production seems quite natural because of its relationship to garment construction, fashion design, and textiles. However, the structure of these programs is questionable when one performs an environmental analysis, which is the first step in strategic planning.

Although the retailing industry shows considerable growth, the domestic apparel production sector appears to be shrinking. In 1982, there were 24,391 manufacturers in the category apparel and other textile products (Standard Industrial Classification [SIC] code 23) (USBC, 1993). By 1987, the number of firms had dropped more than 6% to 22,872 (USBC, 1993). From 1985 to 1992, the number of annual business failures for firms manufacturing apparel and other textile products increased from 338 to 562 (USBC, 1993, p. 540). This represents a 149.4% increase in the number of business failures per year.

The industry shows an accompanying reduction in its labor force. In 1993, employment in the apparel industry stood at 977,200—the lowest level since World War II (AAMA, 1994). This represents a decrease in jobs of almost 27% since 1978. While employment in several manufacturing

sectors has increased during the past 10 years, the apparel industry has lost 18% of its labor force (AAMA, 1994).

The presence of imports appears to be one of the greatest threats to domestic manufacturers. Between 1967 and 1980, the percentage of imports for U.S. consumption grew from 6% to 25% (Glock & Kunz, 1990). Over the past five years alone, U.S. apparel imports have increased 25% (AAMA, 1994). In 1980, domestically-produced apparel supplied 70% of U.S. consumer needs. Today, barely half of the apparel consumed in the U.S. is domestically produced. In addition, the influx of apparel imports has contributed to the trade deficit. Between 1967 and 1979 alone, the apparel trade deficit grew from \$477 million to \$4.2 billion (Glock & Kunz, 1990).

As imports have increased, domestic apparel production has decreased. Domestic production in only six of the nine major garment lines¹ rose in 1993 from 1992 levels. Domestic production of all coats and jackets went from 36% in 1992 to 29% in 1993. The domestic production of men's and boys' knit shirts also decreased (AAMA, 1994). The introduction of the North American Free Trade Agreement (NAFTA) and the provisions of the General Agreement on Tariffs and Trade (GATT) will further affect domestic garment production, with increases in some areas and decreases in others (DeWitt, 1995).

Although clothing and textiles programs are eager to embrace apparel production, many lack the resources to support it. A survey by the Teaching Resource Committee of the Association of College Professors of Textiles and Clothing (ACPTC) indicated that many departments do not have adequate faculty who are prepared to teach today's courses (Lind, 1989). The main areas in which faculty are lacking include merchandising experience, industry experience, computer literacy and

¹The nine major garment lines are men's and boys' knit shirts, trousers and shorts, and woven shirts; women's and girls' slacks and shorts, knit shirts, and woven blouses; and all coats and jackets, sweaters, and dresses (AAMA, 1994).

experience, research and publication skill and interest, and specialized skills and depth in the chosen area.

The traditional home economics' emphasis on women's wear has probably caused many institutions to concentrate on the production of women's garments; this allows professors to apply their existing knowledge in a different way. A recent study of the content of apparel evaluation courses reveals that many professors focus solely or largely on women's wear (Miller & Stiffler, 1994). Some courses also include men's and children's wear. Perhaps other apparel categories should receive more attention, since the women's apparel market is one of the most import-sensitive in manufacturing. Between 1982 and 1987, some parts of this sector lost around 15,000 or more jobs. Manufacturers of women's, misses', and junior's suits, skirts, and coats lost 17,300 jobs during that period (Bednarzik, 1993). Manufacturers of women's, misses', and junior's blouses, waists, and shirts lost 14,200 positions. The related industry for women's handbags and purses lost more than half of its jobs as well.

Perhaps emphasis could be placed on apparel categories, such as girls' and infants' outerwear and men's and boys' neckwear, that exhibit more growth or at least less decline. Other garment lines that have declined less are men's and boys' knit shirts, men's and boys' trousers, and dresses, all of which are at least 60% domestically produced (AAMA, 1994).

The apparel industry has always employed a high percentage of non-professional workers and comparatively few professional workers. In examining statistics for 1982-1987, Bednarzik (1993) found that workers in import-sensitive industries, including apparel, were less likely to be college graduates and to hold professional or technical jobs than those in export-sensitive industries. Import-sensitive industries also posted gains for jobs requiring the fewest skills. Research is needed to determine the qualifications of persons most recently hired to fill professional positions and the qualifications desired for professional positions to be filled in the future.

To date, there has been no empirical evidence to support the contention that apparel manufacturers hire a significant number of graduates from traditional, four-year clothing and textiles programs. Graduates holding bachelor's degrees are also in competition with person's from two-year colleges (Dickerson & Clowes, 1982) and trade schools. These schools sometimes have better facilities for teaching apparel production than do four-year institutions.

There is also the question of the content of apparel manufacturing curricula in four-year programs. Most curricula contain a preponderance of traditional clothing and textiles courses—historic costume, historic textiles, the social/psychological aspects of dress, and the like—but few courses dealing with actual apparel production. Lacking industry experience, faculty may rely heavily upon home-sewing techniques rather than teaching methods used by manufacturers. A review of recent college catalogs reveals that few apparel production programs require course work in industrial engineering, which provides vital background in quality control, cost analysis, ergonomics, time and motion analysis, and other concepts necessary to manufacturing.

To determine the future direction of apparel production curricula, more information is clearly needed. Information about the size of the job market in apparel production for textiles and apparel graduates, the skills and competencies most preferred by the industry, the necessary course work, internships, and industry involvement with educational institutions is vital. In addition, determining the nature of those who compete with graduates of four-year clothing and textiles programs for jobs in the apparel industry would aid in developing both recruitment strategies and curricular content.

Purpose of the Study

This study will explore the needs of apparel manufacturers, who comprise one of the most important target consumer groups of clothing and textiles programs. It will provide insight into which degrees are in greatest demand and which competencies are most important for the positions

being filled now and in the near future. It will also reveal the nature of competitors for professional jobs in the apparel industry. In addition, the study will provide information about manufacturers' perceptions about the quality of preparation and faculty in two- and four-year educational institutions.

To date, few researchers in clothing and textiles have investigated either internal or external consumer groups. Most researchers have sought the opinions of faculty members about program content (Garner & Buckley, 1988; Laughlin & Kean, 1995; Lind, 1989; Ringenberg, 1991; Rudd, 1981). Although some investigators have queried retailers about curricular content (Garner & Buckley, 1988; Hyman-Parker, 1993; Kean, 1985; Sheldon, 1985; Tuntland, 1987), there is little published research about apparel production curricula as of this writing. This investigation should fill that important informational gap.

In the strategic planning process, this investigation is part of the environmental analysis that should be implemented as the first step in determining the practicality of offering any program of study. The results can be used as the basis for resource analysis, goal formulation, strategy formulation, organizational design, and system design for departments designing apparel production curricula. The study will also serve as an example of the application of the marketing concept and strategic planning process to an individual curriculum. It will, hopefully, be useful as a model for similar research on other curricula.

Research Questions

1. For what professional positions are manufacturers seeking employees next?
2. What competencies, skills, and degrees do manufacturers seek for the professional positions that they plan to fill next?

3. Which competencies and skills do manufacturers consider most important for the professional positions that they plan to fill next?
4. Which do manufacturers consider more important for future positions—subject matter knowledge or personal and professional skills?
5. Which support competencies do manufacturers consider most important for future positions?
6. Which clothing and textiles courses do manufacturers consider most and least important for future positions?
7. Which majors do manufacturers favor most and least for future positions?
8. Do manufacturers consider four-year degrees mandatory for future professional positions, or would they consider hiring persons without them?
9. In the opinion of manufacturers, how well are two-year and four-year institutions preparing students for jobs in the garment industry?
10. In the opinion of manufacturers, how valuable are faculty members at two-year and four-year institutions as resource persons for the garment industry?
11. In the opinion of manufacturers, how attuned are faculty members in two-year and four-year institutions to the garment industry's needs?

12. How valuable are foreign-language skills for future positions in the apparel industry? Does their importance vary with the company's level of involvement with other countries?
13. In the opinion of manufacturers, how valuable is internship experience for future positions in the apparel industry?
14. Does firm size, sales volume, or product type or SIC category have an impact on the preferred competencies or skills?

Definition of Terms

The following definitions were used in this study:

Apparel Manufacturer: A company that manufactures apparel and related textile products under the following SIC codes: 2251 (women's full-length and knee-length hosiery, except socks), 2252 (hosiery, not elsewhere classified [NEC]), 2253 (knit outerwear mills), 2254 (knit underwear and nightwear mills), 2311 (men's and boys' suits, coats, and overcoats), 2321 (men's and boys' shirts, except work shirts), 2322 (men's and boys' underwear and nightwear), 2323 (men's and boys' neckwear), 2325 (men's and boys' separate trousers and slacks), 2326 (men's and boys' work clothing), 2329 (men's and boys' clothing, NEC), 2331 (women's, misses', and juniors' blouses and shirts), 2335 (women's, misses', and juniors' dresses), 2337 (women's, misses', and juniors' suits, skirts, and coats), 2339 (women's, misses', and juniors' outerwear, NEC), 2341 (women's, misses', children's, and infants' underwear and nightwear), 2342 (brassieres, girdles, and allied garments), 2353 (hats, caps, and millinery), 2361 (girls', children's, and infants' dresses, blouses, and shirts), 2369 (girls', children's, and infants' outerwear, NEC), 2371 (fur goods), 2381 (dress and work

gloves, except knit and all leather), 2384 (robes and dressing gowns), 2385 (waterproof outerwear), 2386 (leather and sheep-lined clothing), 2387 (apparel belts), 2389 (apparel and accessories, NEC), and 239 (fabricated textiles).

When the four-digit SIC code is not known, the three-digit code will be used, as follows:

225 (total knit apparel mills), 231 (men's and boys' suits and coats), 232 (men's and boys' furnishings), 233 (women's, misses', and juniors' outerwear), 234 (women's, misses', children's, and infants' underwear and nightwear), 235 (millinery, hats and caps), 236 (girls', children's, and infants' outerwear), 237 (fur goods), 238 (miscellaneous apparel, including dress and work gloves, except knit and all leather; robes and dressing gowns; waterproof outerwear; leather and sheep-lined clothing; apparel belts; and apparel and accessories NEC), and 239 (fabricated textiles) (AAMA, 1994).

Apparel Industry: The term used to describe all firms involved in the design, production, and distribution of wearing apparel manufactured under SIC codes 225 and 23.

Apparel Production Curriculum/Program: A course of study designed to prepare students to work for manufacturers of apparel and related textile products (SIC codes 225 and 23) in a position involving design, promotion, production or manufacture, merchandising, promotion, marketing, sales, or distribution.

Competencies: "The knowledge, skills, or attitudes needed to accomplish specific tasks within an occupation" (Beery, 1980).

Content Skills: Those proficiencies developed in educational courses that relate to specific subject matter., such as textiles, mathematics, marketing, and fashion design (Tuntland, 1987).

Curriculum: "An organized set of formal educational and/or training intentions" (Pratt, 1980, p. 4). Also the total plan of all courses and experiences available for the education of students (Evans, 1973).

External Consumer: An agency— private industry, graduate schools, government, or nonprofit organization—that utilizes the graduates of educational institutions (Murphy, 1979).

Home Economics/Human Ecology: "The study of man as a total being, his near environment, and the interaction between them" (Creekmore, 1968, p. 95).

Internal Consumer: A person who utilizes or consumes education or knowledge, i.e. an alum or a perspective, enrolled, or prior student of an education institution (Murphy, 1979).

Personal Skills: Proficiencies, such as written and oral communication, time and stress management, problem solving, decision making, organization, and leadership, that enhance one's ability to handle the responsibilities of a professional position.

Professional Position: A job that requires at least a bachelor's degree.

Standard Industrial Classification (SIC): "A numerical system used by the U.S. Bureau of the Census to classify markets for the systematic collection and analysis of data relative to business activity " (Glock & Kunz, p. 523).

Support Area: A disciplines, such as industrial engineering, art, marketing, or management, in which a student is expected to take courses that will enhance his or her understanding of and ability within a particular major area of study.

CHAPTER II

REVIEW OF LITERATURE

In strategic planning, environmental analysis is the first step. It explores the internal, market, public, competitive, and macro environments, supplying planners with vital information about trends, threats, and opportunities that affect the organization. This chapter explores the environmental factors that impact the apparel production curriculum. It discusses the current state of higher education and reviews research on curriculum evaluation, on the relationship between industry and education, and on the identification of the content and personal skills required for various positions. It also investigates competitors for apparel-related jobs and the effects of business size or type on job requirements.

Because there is scant research on apparel production programs, this review of literature relies heavily upon investigations of other disciplines, including merchandising, retailing, marketing, business, and finance. The current study will apply the principles and techniques gleaned from research in other disciplines to apparel production curricula.

Challenging the Future:

Internal and External Factors That Affect Planning at the University & Departmental Levels

Today's educators face numerous challenges that impact the availability and allocation of resources and the selection and design of curricula. The reduction in financial resources has, perhaps, been the most egregious. Higher education entered the 1990s in the worst financial state in 50 years.

In 1991, state appropriations for public higher education fell below the level of the previous year for the first time in 30 years (Hartley, 1993). Although budget cuts were once thought to be a temporary annoyance, they have become a chronic condition in higher education (Haley et al., 1993). A recent survey of university administrators indicated that 34% had undergone mid-year budget cuts during 1992-93. Another 38% of administrators expected budget cuts in 1993-94. (Chronicle of Higher Education, 1993). Among the reasons for dwindling budgets are inflation, reductions in funding from state and federal governments, the increasing cost of need-based scholarships, and the massive need to update and repair library, laboratory, and classroom facilities and to equip them with the latest technology (Doyle & Newbould, 1980; Mahoney, 1994). The bleak financial outlook has heightened the competition for funding among institutions and departments.

Flagging enrollments have also diminished available funds. The western world is undergoing demographic changes that are reducing the number of college-age persons in the total population (Brimlow, 1987; Doyle & Newbould, 1980). Between 1991 and 1992, enrollment in higher education increased by approximately 132,000 students, an increase of only 1%. This is substantially less than the 3.9% increase of 540,00 students between 1990 and 1991 (National Center for Education Statistics [NCES], 1994). While enrollment in higher education increased by 18% between 1981-82 and 1992-93, it is projected to increase only 9% between 1992-93 and 2003-04 (NCES, 1993).

Educators now face a growing number of nontraditional students with diverse needs. Whereas the college-age population has decreased, the number of older students has increased (Brimlow, 1987; NCES, 1994). Between 1981-82 and 1992-93, the enrollment of students 35 years of age and older in higher education increased by 86%. The enrollment of students in this age group is expected to increase by 14% between 1992-93 and 2003-04. Between 1992-93 and 2003-2004, a

growth rate of 6% to 13% is projected for the enrollment of students 20 to 24 years of age (NCES, 1994).

Other changing student demographics include ethnicity and gender. From 1991 to 1992, undergraduate enrollment in higher education of white, non-Hispanics declined while that of African Americans, Hispanics, Asians or Pacific Islanders, American Indians or Alaskan Natives, and nonresident aliens increased (NCES, March 1994, p. iv). Women accounted for 55% of the total enrollment in higher education in 1992. Between 1991 and 1992, they accounted for 82% of the increase in total enrollment (NCES, March 1994, p. iv).

Declining enrollments have intensified the competition for students among four-year institutions (Shim & Morgan, 1990). Various disciplines are also vying for the attention of the same students. Two-year institutions pose an additional threat. Since World War II, the number of two-year colleges has increased dramatically (Dickerson & Clowes, 1982). Many of their curricula in applied technologies, such as apparel production, compete with programs offered at four-year institutions.

Projections from the NCES indicate that between 1992-93 and 2003-4, enrollment in two-year institutions will increase at a faster rate than that of four-year institutions (Hussar, 1993) Between 1991 and 1992, about 53% of the net enrollment in institutions of higher education occurred in two-year institutions (NCES, March 1994, p. iv). According to the U.S. Department of Labor, numerous jobs requiring a two-year college degree have very high employment potential through the year 2000 ("Good jobs," 1993).

In recent years, the quality of undergraduate education and the relevance of research have been increasingly subject to scrutiny (Bailey, Firebaugh, et al., 1993). In a report called "An American Imperative: Higher Expectations for Higher Education," leading educators, business leaders and foundation executives indict higher education for failing to produce highly skilled

workers. The report also states that undergraduate education is often little more than secondary material that is "warmed over and offered at much higher expense" (Honan, 1993). Williams (1985) notes that recent studies of college curricula severely criticize the educational product that students purchase: Colleges fail to teach basic values of western civilization and have replaced the classics with vocational preparation.

A possible explanation for the poor performance of U.S. workers could be that their degrees are now worth less because schools have become less rigorous (Samuelson, 1992). Part of the problem may be a result of lowering academic standards in order to accept less able students. Some colleges have maintained their volume by reducing their requirements and expectations (Brimlow, 1992).

Dissatisfaction with the expertise of educators and with college curricula has affected the business community's attitude toward education. Clothing and textiles programs have been under particular scrutiny (Bailey et al., 1993; Lind, 1989). In a study of executives of apparel trade organizations, Kunz, Lewis, and Coffin (1992) found that 10% were unwilling to cooperate with clothing and textiles educators. Reasons included the feeling that clothing and textile educators could do nothing for them and that other departments, such as engineering, could better satisfy their needs. Many executives also felt that they could do more for educators than educators could do for them.

Although resources and the quality of education are decreasing, colleges continue to support faculty members who fail to perform yet remain secure because of the system (Mahoney, 1994). Moreover, many courses are taught by faculty with little expertise (Williams, 1985). Lind (1989) stresses the need for qualified faculty who are prepared to keep pace with global and professional changes. This means hiring new faculty or retraining existing faculty in order to implement effective programs.

Decreases in funding and in enrollment revenues have resulted in continuous tuition hikes. Although inflation is at its lowest point in decades, college tuition continues to increase four to five points above the general inflation rate (Mahoney, 1994). Consumers are not only disillusioned with the educational product but with its inflated price. They are further dissatisfied with the bleak occupational outlook for graduates.

Whereas a college degree once held the promise of a bright future and a good position, graduates now enter an uncertain job market. The Department of Labor predicts that college enrollments will outpace the growth in the number of professional and managerial jobs (Society, 1993). College graduates who enter the labor force in the 1990s and early 2000s are likely to encounter a less favorable job market than that of the 1980s (Shelley, 1992). According to a Labor Department study released in 1992, 30 % of each new crop of graduates between now and 2005 will immediately joined the ranks of the unemployed. New graduates will also have to compete with the unemployed graduates of previous years (Greenwald, 1993). Economist Kristina J. Shelley calculates that the percentage of new jobs requiring a college degree will continue to rise (Koretz, 1992). However, the supply of new workers with college degrees will still exceed demand.

The dearth of professional jobs often forces college graduates to seek and accept positions that do not require a degree or the attendant professional skills. Economist Daniel E. Hecker (1992) notes that the proportion of college graduates who have been underutilized has been high for about two decades. Hecker uses the term "underutilized" to describe "college graduates who work in jobs that do not require their level of education" (p. 14). Since the early 1970s, analyses of the job market for college graduates prepared by the Bureau of Labor Statistics (BLS) have indicated that the number of college graduates seeking jobs has exceeded the supply of job openings for which a college degree is required. Because college graduates comprise a relatively small portion of the

apparel industry's labor force (Bednarzik, 1993), these findings have special significance to faculty responsible for apparel production programs.

Assuming a moderate amount of economic growth and considering other factors that affect the job market—the growth of industries that employ college graduates, the growth of occupations because of changing technology and business practices, the increasing complexity of existing jobs, and the need to replace graduates who leave the labor force—there will be an average of 914,000 college-level job openings per year for the 1990-2005 period. During that time, an average of 1.32 million college graduates per year are expected to enter the labor force—406,000 more than demand. Only 70% of those graduates can expect to find jobs that require a college degree, compared to about 80% for the 1984-90 period (Shelley, 1992).

Canadian graduates face similar declines in the number of professional positions. In 1992, the hiring of new graduates decreased between 20% and 25% in some areas. Some of Canada's larger companies reported even sharper declines (Maclean's, 1992).

Recent changes in American society and in the global environment will have increasing impact on the content and delivery of education and related services. The increase in foreign investments in the U.S. and the growth in some developing countries (Bailey et al., 1993) are changing the economic base. At present, about 90% of all U.S. businesses confine themselves to domestic markets (Smith, 1993). But it will become more commonplace for U.S. businesses to consider international markets as the number of international competitors increases.

Expanded global awareness has resulted from international work experiences, travel, and new communication technologies (Bailey et al., 1993). Contact with other countries intensifies the need to understand other cultures, religions, and languages (Fair, Norum, & Hamilton, 1990; Ruhland, 1993; Samson, 1993; Shengliang & Boatler, 1993; Smith, 1993). Willingness to relocate

overseas and fluency in another language can boost a candidate's chances for employment, especially in the textiles, home furnishings, and apparel industries (Wiener, 1991).

Even at home, Americans need heightened global awareness and foreign language skills. The United States has a culturally-diverse society composed of increasing proportions of minorities, especially Hispanics, African-Americans, and Asian Americans (Bailey et al., 1993).

The proliferation and growth of small rather than large businesses have significantly changed the job market. In 1992, Dun and Bradstreet estimated that 80% of the 1.9 million new jobs created that year would be in companies with fewer than 100 employees (Moore, 1992). In 1995, the Small Business Administration reported that small businesses were providing 55% of all jobs (Carey & McLean, 1995). This trend is expected to continue. Instead of working for large companies, graduates may find more promising employment with smaller firms (Moore, 1992). University placement officers in Canada also contend that many graduates will eventually be employed by small and medium-sized firms (Maclean's, 1992). Educators must begin to consider the needs of smaller companies when developing curricula. The competencies that small and medium-sized companies require in their employees sometimes differ from those sought by large firms (Klein & Levy, 1993).

The speed and breadth of technological change have also impacted the size and characteristics of the work force (Bailey et al., 1993). Computer use is increasing in all aspects of the fashion industry, including design, promotion, retailing, and apparel production (Miller, 1989; Sheldon & Regan, 1990). Even smaller firms are taking advantage of the technology by using microcomputers to perform task, such as pattern making, grading, and marker making, that were once the sole domain of costly, apparel-dedicated systems (Miller, 1994, 1990; Miller & DeJonge, 1987; Miller & Racine, 1988). The demand for college graduates with scientific and technical backgrounds is expected to increase ("College grads," 1991). In addition, a growing trade and service

sector will account for 85% of the work force by the year 2000. There will be a concomitant decrease in manufacturing (Byrd, 1990).

Changing work patterns and family structures will continue to affect the delivery of education (Bailey et al., 1993). Older students who are returning to school and students with families have drastically different requirements than typical, college-age students who live on campus. Institutions will need to consider curricula and teaching methods suitable for persons with life and work experience and who may require evening and weekend courses, parking facilities, expanded library hours, child care, and alternative internships (Stewart, 1991).

Other changes that affect education and business include an increasing number of older Americans with both political and economic power, a growing concern for world environmental issues, and a focus on lifestyles that emphasize wellness. There is also a heightened sense of community, which is manifest in volunteerism and political involvement in issues related to crime, safety, the environment, substance abuse, disease control, and the overall quality of life (Bailey et al., 1993). In coming years, educators must be prepared to frequently update the curriculum in order to keep pace with contemporary society (Bailey et al., 1993). Programs must anticipate, adapt, and respond to the rapidly-changing forces in today's world and employment market. Future graduates must enter the work force with a multi-cultural awareness and a global perspective.

Evaluating the Curriculum:

Seeking Input From Suppliers & Consumers

Researchers have queried members of both the internal and market environments in order to evaluate the content and quality of the curriculum. These include suppliers (educators), internal

consumers (current students and graduates), and external consumers (organizations and businesses that employ graduates). Each group provides a unique perspective.

Educators are able to identify the strengths and weaknesses of their own programs from an academic standpoint. This information is helpful for gaining an overview of existing programs and can serve as the basis for developing universal goals and curricula for the profession. Lind's (1989) study of the characteristics of textiles and clothing departments and their future requirements for faculty identified needs that have resulted from recent curricular changes. Many departments lacked faculty who held Ph.D. degrees and who were active in recognized forms of research and publishing. Other faculty deficiencies included merchandising and industry experience, computer literacy, and depth in an area of specialty. Lind also noted that the supply of adequately prepared faculty might not be sufficient to meet future demands.

Recent or anticipated program changes included strengthening fashion merchandising, apparel design, business/marketing, computer applications, the interdisciplinary focus, apparel production, internships/work experience, and the international focus (Lind, 1989). Courses or topics recently added to the curriculum included merchandising, business, apparel evaluation/production, marketing (including international), fashion design (including functional and draping), historic clothing/textiles, visual merchandising, statistics, accounting, math, textiles (specialized course), the economics of clothing and textiles, computers, practicum/internship, salesmanship/buymanship, the fashion industry, and fashion illustration/promotion.

Topics slated for reduction or deletion included clothing construction, art or design, fashion merchandising, and history/conservation. Courses recently deleted from the curriculum included clothing construction, clothing selection, the social psychology of clothing and textiles, home economics core subjects, historic clothing and textiles, pattern making, visual merchandising, fashion design, family clothing, advanced textiles, consumer economics, fashion illustration, personnel

management, statistics, accounting, and math. The reasons for course changes included making graduates more employable (51.6%), de-emphasizing the home economics orientation (17.4%), changes in university requirements (9.0%), student demand (7.7%), and the addition of new programs (5.2%).

Although the respondents in Lind's study largely agreed upon future faculty requirements, there were drastic differences between the subjects that had been strengthened or added to the curriculum and those that had been de-emphasized or dropped. These included statistics, accounting, math, fashion design, and visual merchandising. The differences may have resulted from efforts to serve consumers with different needs, faculty expertise and availability, or different program focuses. From the perspective of outsiders, however, this lack of consensus could be construed as a weakness in the profession of clothing and textiles. The same lack of consensus is evident from the multitude of names for departments and colleges that house clothing and textiles programs (Haley et al., 1993).

In a study to determine which concepts/competencies educators considered relevant and were currently integrating into apparel merchandising curricula, Ringenberg (1991) queried clothing, textile, and merchandising faculty at institutions of higher education in the U.S. and Canada. The level of importance assigned to some concepts differed significantly between educators who had industry experience and those who had none. Significant differences in rankings were also related to the respondent's age, rank, type of institution (two- or four-year), institution size, and years of teaching experience. Overall, however, the six most important concepts being integrated into apparel merchandising curricula were decision-making skills, personal communication, apparel terminology, computers, retail buying, and merchandise buying.

Laughlin and Kean's (1995) study of the current offerings of and future plans for clothing and textiles revealed similar results. Administrators planned to emphasize critical thinking, value systems, statistics, psychographics, demographics, and other broad-based skills that are transferable

to a range of employment situations. They planned to de-emphasize current facts, how-to's, and technical skills.

Although studies that query only educators provide helpful comparative information, they may lead educators to focus mainly on what different institutions are doing rather than on the expressed needs of graduates and employers. This writer has observed that the chief resources for some curricula are catalogs from other institutions rather than input from industry.

In an effort to identify and gain a broader understanding of the concepts to be included in the curriculum, several researchers have surveyed both educators and employers. Sheldon's (1985-1986) study of internships investigated the factors that influenced retailers to participate in internship programs, intern selection factors, and the relative importance of prerequisite courses. The subjects of the study were educators and retailers, including executives, personnel directors, and store managers. Educators and retailers ranked the prerequisite courses on a five-point Likert scale from "no importance" (1) to essential (5). Table 1 lists the courses, as ranked by each group.

There were significant differences between the rankings of retailers and educators on retailing structure and strategy, marketing, fashion theory, and merchandise display. Educators ranked retailing structure and strategy, fashion theory, and marketing much higher than did retailers. Although retailers ranked merchandise display in fifth place, educators considered it the lowest priority.

Further disparity between retailers and educators is evident in their perceptions of internship activities. Retailers gave higher ratings to internship activities that related to daily activities on the sales floor. Educators gave higher ratings to activities related to buyers' responsibilities. They were more interested in higher-level buying activities for interns that would, in effect, prepare them for only one job. Retailers, however, wanted to provide interns with a firm foundation by acquainting

them with daily activities and giving them exposure to more people and to a broader range of positions.

Comparing the responses of educators and employers identifies differences between the groups and pinpoints potential problems. A problem evident in Sheldon's research is the educator's propensity to focus on only a few positions. The same problem surfaced in Kunz, Lewis, and Coffin's (1992) study of apparel and textile trade associations. Executives criticized textiles and apparel students for having narrow and unrealistic perceptions of career opportunities. They also indicated that educators needed to broaden students' perspectives on careers in apparel- and textile-related fields beyond apparel design, retail merchandising, and textile science.

Similar discrepancies are evident in Chambers' (1986) study of criteria for the successful employment of fashion merchandising students in entry-level management positions. Educators and retailers ranked 39 competencies needed by entry-level managers on a five-point Likert scale from essential (5) to "no value" (1). Table 2 lists the top 10 competencies as ranked by both groups.

It is disturbing to note that the highest-ranking item for retailers—"working with customers"—is fourth on the educators' list. The retailers' fourth-ranked item is eleventh on the educators' list. Retailers' items 7, 8, 9, and 10 are ranked 22, 21, 19, and 23—respectively—by educators. Because educational institutions have traditionally employed a selling orientation (Conant et al., 1985), which focuses first on the organization's needs, the lack of emphasis on working with customers and on closing sales is not surprising.

Table 1
Prerequisite Courses for Retail Internships as Ranked by Retailers & Educators in Sheldon's (1985-86) Study

Rank	Retailers' Ranking	Educators' Ranking
1	Communications/Human Relations	Communications/Human Relations
2	Management	Retailing Structure and Strategy
3	Merchandising	Merchandising
4	Math or Accounting	Marketing
5	Merchandise Display	Fashion Theory
6	Retailing Structure and Strategy	Management
7	Marketing	Fashion Marketing
8	Fashion Marketing	Math or Accounting
9	Fashion Theory	Textiles
10	Advertising and/or Promotion	Advertising and/or Promotion
11	Textiles	Computers
12	Computers	Merchandise Display

Note. Source: "Attitudes of retailers and college educators toward fashion retail internships" by G. Sheldon, 1985, *Clothing and Textiles Research Journal*, 4 (2), pp. 9-15.

Table 2
Top 10 Competencies for Successful Employment of Fashion Merchandising Students in Entry-Level Management Positions as Ranked by Retailers & Educators in Chamber's (1986) Study

Rank	Retailers' Ranking	Educators' Ranking
1	Working with Customers	Good Relations with Employees
2	Good Relations with Employees	Using Sales Reports in Planning
3	Delegating Responsibility	Communicating Effectively
4	Arranging Floor Space	Working with Customers
5	Identifying Customer Needs	Developing a Seasonal Budget
6	Using Sales Reports in Planning	Identifying Customer Needs
7	Preventing Stock Shrinkage	Delegating Responsibility
8	Closing Sales	Evaluating and Planning
9	Selecting Merchandise	Selecting Items for Advertising
10	Evaluating Oneself	Using Trade Terminology

Note. Source: *A Comparative Study of Desirable Competencies of Fashion Merchandising Students* by J. G. Chambers, 1986, doctoral dissertation, The University of Alabama, University, Alabama.

The results of the aforementioned studies suggest that educators are not attuned to the realities of the work force. In the Kunz et al. (1992) study of apparel and textile trade association executives, some respondents felt that educators did not adequately prepare students to work in the apparel and textile industry and that educators could do nothing for them. Most respondents, however, saw the need for greater cooperation with educators and were willing to share their expertise through seminars, tours, consulting, internships, and research.

In a study to determine the extent to which internships, externships, and advisory committees were being utilized by fashion retailing programs, Hyman-Parker (1993) surveyed educators and retail employment executives. Both groups of respondents concurred that open and regular communication between educators and retailers was essential to any collaborative effort and to bridge the gap between academe and real-world careers in fashion retailing. The study emphasized the need for internships, externships, and/or advisory committees in giving both students and educators a more realistic perspective of the business world.

Many researchers, particularly those outside of home economics, have gone directly to consumers for input when developing or modifying the curriculum. This is true of most studies in business, accountancy, and finance. Because graduates of these disciplines compete with clothing and textiles/merchandising graduates for jobs (Tuntland, 1987), familiarity with research in these fields is imperative.

In the year 2000, The American Institute of Certified Public Accountants (CPAs) and the licensure boards in many states will require certified public accountants to have 150 hours of higher education. Klein and Levy (1993) surveyed CPAs in public practice in order to determine the curricular changes that practitioners would like to see as a result of the new educational requirement. The sample contained national and international large firms, local small firms, and sole practitioners. All firms supported the need for internships, public speaking, interpersonal skills, professional

ethics, and business structure analysis. The study, however, revealed differences between the needs of small and large firms. The subjects in which small and large firms wanted additional hours or course work also differed. Klein and Levy's findings indicated the need for a curriculum with tracks that can produce graduates who are prepared to work for either large or small firms. Programs also need the flexibility to meet the varying needs of different firms.

In order to discuss and rank competencies in the general business curriculum and the necessary skills for graduates, the University of Mississippi sought input from its Business Advisory Council (BAC) (Aiken, Martin, & Paolillo, 1994). The group of 16 senior-level executives used a Group Decision Support System (GDSS) to electronically brainstorm and collaborate on the curriculum. The BAC concluded that the curriculum would be improved by greater emphasis on communication skills, problem solving, TQM, internships, organizational behavior, ethics, computer applications, technology, speakers, higher academic standards, stronger math and statistical skills, functional areas, integration, globalization, engineering, foreign language skills, regulatory issues, and economics.

Ray, Stallard, and Hunt (1994) queried human resource managers (HRMs) to determine how they evaluate business graduates during the initial screening and interview and on general skills and work experience. The subjects were drawn from a random sample of practicing members of the Society for Human Resource Management. They represented employers from all industries of the standard industrial classification (SIC) as well as government agencies and institutions. Educators and other non-practicing members were not included in the sample.

HRMs based the decision to make initial contact upon—in order—the résumé, cover letter, major grade point average (GPA), overall GPA, and college attended. While the school's reputation and accreditation were considered important at this point, references were not. At the initial

interview, the criteria most important to HRMs were poise, neat appearance, attire, references, and having contacts within the organization.

The general skills and work experience that HRMs considered most important included communications skills, computer knowledge, job-related technical skills, human relations skills, problem solving skills, and related work experience. HRMs also stressed the need for programs that provide opportunities for students to learn about the importance of résumés, cover letters, and grades in the initial screening. In addition, the program should provide opportunities for students to develop job-related technical skills, human relations skills, and problem-solving skills.

To determine which quality—educational background, prior work experience, or training potential— was most important to accounting recruiters, Cook and Finch (1994) sampled accounting employees throughout the nation who represented public accounting, industry, government, and education. Overall, educational background and training potential were selected by almost equal numbers of respondents. Prior work experience was next in importance.

Cook and Finch discovered ranking variations by type of firm and sector. The ranking for industry was education, experience, and then training potential. For public accounting and government, it was potential, education, and experience. Accountants from educational institutions overwhelmingly ranked education first and then equally selected experience and training. Two thirds of the accountants from national firms ranked education highest, while more than half of the subjects from regional and local firms ranked potential highest.

In addition to seeking input from external consumers, some researchers have explored the needs of internal consumers when developing curricula. The internal consumers of higher education are prospective students, enrolled students, alumni, and students who dropped out or transferred (Murphy, 1979). Current or enrolled students have been the subject of several studies. Kotler (1976)

believes that one of the most effective ways to cut recruitment costs is to increase student satisfaction on campus. He emphasizes that satisfied students are the institution's best advertisers.

Shim and Morgan (1990) sampled enrolled students in order to identify the factors that influence students' attitudes toward their majors and satisfaction with their majors/departments. The research was executed in an attempt to investigate the present student market in textiles and clothing, how successfully the faculty is satisfying consumers' needs and wants, and how departmental planning can be enhanced. The results indicated that perceived career image and course perceptions tend to be the dominant influences in predicting attitudes toward a major and satisfaction with a major/department. This implies that implanting positive perceptions of future career possibilities in students' minds would help them to form favorable attitudes towards the major in question.

General satisfaction with the university appeared to be the second most important predictor of satisfaction with one's major/department. Hence, student satisfaction should be examined within the total university framework and should be considered in strategic planning for the institution.

Because course perceptions seemed to have a strong influence on both students' attitudes toward majors and satisfaction with departments, Shim and Morgan recommend course and curriculum evaluation by students. This would lead to better communication between faculty and students, increased enrollment, and better preparation of graduates. In order to attract potential students, educators might concentrate on career image and opportunities and on curricular design.

Shim and Morgan concluded that considering students' perceptions and needs was beneficial to the entire organization. Students who were highly satisfied with their majors/departments 1) were more likely to perceive the course offerings as useful and interesting, 2) tended to be satisfied with the university, 3) were more likely to have favorable attitudes toward their major, 4) considered the image of the career to be favorable, 5) were more likely to perceive the work load to be low, and 6) tended to be influenced by professors or advisors on the selection of a major.

In addition to the competition to attract students, the influx of nontraditional students has intensified the need for institutions to become more sensitive to consumers' needs. Stewart (1991) used the marketing orientation as the basis for a study of the educational product offered to students at a public university. Each item on the questionnaire was couched in terms of the four P's of marketing: product, price, place, and promotion. The educational "product" included curriculum variety, course scheduling procedures, student evaluations of faculty, opportunities for personal growth via professional and leadership activities, academic advising, student interaction with faculty and administrators, and library holdings. "Price" included tuition expense, the availability of financial aid, the adequacy of part-time campus employment, the development of innovative methods to help students pay tuition, and the fairness of paying the same tuition regardless of class standing or major. "Place" encompassed issues related to the days and times of course offerings, campus safety and attractiveness, study areas, parking facilities, dining hall meal plans, health and library services, procedures for selecting dormitory and roommate assignments, and the availability and convenience of lounge facilities. "Promotion" focused on communication issues, including whether promotional materials (catalogs, letters, brochures, etc.) accurately portrayed the institution, answered students' questions, and adequately informed students about extracurricular activities, curricular changes, and requirements.

Stewart's results indicated that, overall, the university was meeting students' needs. Areas needing improvement included the availability of parking facilities, course scheduling procedures that were convenient for students, the scheduling of courses at times that were convenient for students, and the clear communication of changes in curricular requirements. Other needs identified were innovative methods of helping students to pay tuition, the willingness of the administration to consider student opinions when establishing policies and procedures, and procedures for selecting dormitory assignments that were convenient for students.

In order to gain a broader perspective, some researchers have sought simultaneous input from suppliers, internal consumers, and external consumers. Garner and Buckley (1988) queried retailers, educators, and graduates in order to determine which curriculum elements were perceived as most and least important to job performance in careers related to fashion marketing and retail merchandising. The curriculum elements fell into eight cluster-area blocks: textiles, clothing construction, fashion merchandising, social science aspects of clothing and historic costume, apparel and accessory design and selection, professional preparedness, textiles and apparel industry and economics, and support courses outside of apparel. Each concept was rated on a four-point scale, from not important (1) to essential (4).

There were significant differences in the ratings among all three groups of subjects. In most blocks, educators tended to rank curriculum elements higher than did retailers and graduates. In the fashion merchandising block, items on which the two groups differed most were computer literacy, trade journals, resident buying offices, and case studies for decision-making in the business context. Educators ranked these curriculum elements higher than did employers. The authors note, however, that computer literacy was a new concept at the time of the study and should be monitored for acceptance as computers are integrated into retail environments.

In the textile and apparel industry and economic block, no item received a mean rating above 3.0. Items in this block, which included apparel and accessories production and distribution, the domestic and international textile and apparel markets, and plant layout, were recommended for removal from the required portion of the retail curriculum.

Among the 14 elements in the textile block, only four items—fibers and yarns, textiles for apparel, fabric finishes, and laundry and dry cleaning procedures—rated above 3.0 overall. Three of the 22 items in the clothing construction block—garment fitting, alterations, and price-quality relationship in apparel construction—received an overall rating above 3.0. Although construction

areas were not important to most employers, they were of interest to retailers who offered dressmaking, tailoring, and alterations.

In the apparel design and selection block, the highest-ranking items were apparel terminology and color concepts, the latter of which received a high rating from all groups. Only one of the 10 items in the social science block—the clothing needs of individuals and families—ranked above 3.0. Items that approached 3.0, however, were fashion change and the social-psychological aspects of apparel.

Some of the highest-ranking items on the questionnaire belonged to the professional preparedness block. These included self presentation in business, internship experience at the retail management level, and the job market in apparel marketing. Graduates ranked self-presentation and internship at the management level more highly than did employers and educators.

Garner and Buckley found that items in the block for support courses outside of apparel also received some of the highest ratings. Items rated above 3.0 were marketing, management, speech communications, accounting, advertising, mathematics, personnel management, and technical communications (writing). The item on the questionnaire with the lowest rating was French, which retailers rated 1.61. Other low-ranking items were foreign languages and chemistry. Retailers also gave low ratings to computer literacy and foreign travel. With globalization, however, the attitudes expressed in this study toward international trade, foreign travel, and foreign languages may change (Fair et al., 1990). Lackadaisical attitudes towards computer literacy may have also been a reflection of the times.

The two most highly rated items on Garner and Buckley's (1988) questionnaire were marketing and self-presentation in business, which both had a rating of 3.61. Having scores between 3.5 and 4.0 (essential), the other top-rated items were inventory management and stocking procedures, merchandise buying methods, price-quality relationship in apparel, salesmanship,

consumer behavior, management, and speech and communications. Only five of these items belonged to the fashion merchandising group. The two top items belonged to the professional preparedness and support course blocks.

The greatest differences in ratings were between educators and retailers, with graduates falling somewhere in between. Graduates, however, ranked professional preparedness higher than did the other two groups. They also ranked many fashion merchandising concepts lower than did educators and retailers. There were differences among ratings given by the three groups on almost 60% of the individual curriculum concepts. Thus, Garner and Buckley suggests that educators would benefit from obtaining input from employers and graduates before making recommendations for curricular content. Overall, 36% of the curriculum elements were highly recommended to remain in the curriculum, 15% were suggested for removal or de-emphasis, and 49% were selected to receive priority over those to be de-emphasized.

Gender and age may also have an impact on how employers and educators view the curriculum and the job market. In Kean's (1985-1986) study of buyers employed by discount stores, 62% of the respondents were male. Most (51.1%) were 31-45 years of age, with 61% being 45 years of age or younger. Rogers and Lutz's (1990) sample of women's sportswear buyers was 17.5% male. These demographics contrast sharply with those of clothing and textiles faculty members. Ringenberg's (1991) sample of educators, who were selected from the active membership of the Association of College Professors of Textiles and Clothing (ACPTC), was 96.1% female, with 61% of the sample 41 years of age or older. Garner & Buckley (1988) also drew their sample from ACPTC. The differences that they found among educators, retailers, and graduates could have also been partially a function of age and gender.

Work experience is another factor that could affect perceptions of the job market and of necessary skills. Whereas 69% of Kean's (1985-1986) buyers had at least seven years of retail

experience, 66.8% of the educators in Ringenberg's (1991) study had four or fewer years of experience in retailing. In a study of the future needs of clothing and textiles units, Lind's (1989) subjects voiced concern over the lack of faculty members with experience in merchandising and industry.

Identifying the Competitors for Apparel-Related Positions

Investigating the competitive environment is an important phase of the environmental analysis. When proposing and planning programs, educators need to know with whom their graduates will compete for jobs. It is helpful to be cognizant of the majors and educational levels of competitors as well as of how they obtained their jobs. Knowing the composition of the work force also leads to a better understanding of hiring practices and of the skills that employers considers important.

Tuntland (1987) queried supervisors and managers in retailing, the apparel and fabric industries, and related businesses in order to determine the adequacy of the fashion merchandising program at California State University - Long Beach. Her sample consisted of 98 managers, comptrollers, designers, sales representatives, presidents, vice presidents, owners, area supervisors, and sales assistants. Only 14.2% of the sample had majored in merchandising. Less than 1.0% of the respondents had majored in either textile science or textiles/apparel. The most frequently mentioned majors were liberal arts (16.0%), marketing (15.1%), and management (15.1%). The largest number of respondents (23.6%) had "other" majors. Whereas there was a small number of finance and accounting majors, there were no industrial engineering majors in the group.

The largest group of Tuntland's subjects (35.7%) held bachelor's degrees. Only 5.1% held graduate degrees. These two groups comprised only 40.8% of the sample. Another 31.6% of the

subjects held associate's degrees, while 23.5% listed high school as the highest level of education completed. The latter two groups accounted for 55.1% of the sample.

Tuntland found that 56.1% of the subjects had obtained their jobs through internal promotions and 12.2% through company recruitment. Other positions were self-initiated (16.3%) or obtained through headhunters (4.1%).

In order to assess the perceived training needs of discount store buyers, Kean (1985-1986) queried 57 buyers who represented discount stores throughout the continental United States. Only 54% of the respondents had up to 16 years of education, while 33% had 12 years of education.

Rogers and Lutz (1990) reported similar findings in their study of the quality indicators used by women's sportswear buyers. Of the 137 buyers sampled, only 28.5% held at least a bachelor's degree. High school was the highest level of education listed by 20.5% of the buyers. Another 39.5% had either attended a business or community college or had some college training.

Although Rogers and Lutz did not report the college majors of their subjects, they did the percentage of respondents who had taken clothing and textiles courses: clothing construction (26%), beginning textiles (21%), advanced textiles (9%), fashion merchandising (23%), garment evaluation (14%), and textile evaluation (9%). Despite their lack of degrees and course work in textiles and clothing, the buyers were apparently successful at their jobs: Eighty-four percent had held their jobs for at least six years.

Identifying Competencies Desired by Employers

A vital step in assessing the market environment is the identification of the skills and competencies that are most important to employers. A review of the research in textiles and apparel as well as in other disciplines reveals several important, general trends.

Tuntland (1987) queried 98 supervisors and managers in apparel production and retailing about the content and personal skills required for entry-level and middle-management positions in the textile and apparel industry. The top-ranking content skills—those viewed as very useful to extremely useful by at least 60% of the respondents—were business (87.8%), merchandising (83.7%), mathematics (72.5%), and textiles (64.3%).

Content skills rated as not very useful by the majority of the respondents were industrial engineering (63.3%) and science (61.2%). Compared to other content skills, computer science had a relatively low rating. It was considered useful by 34.7% and very useful to extremely useful by 35.7%. Liberal arts shared similar ratings, being viewed as useful by 34.7% and very useful to extremely useful by 33.7%. The low ratings of science, industrial engineering, and computer science may have been related to the fact that the sample consisted largely of retailers (43.9%). If more respondents had been involved in apparel manufacturing, the results may have differed. At the time of the study, computer use in apparel manufacturing and retailing was a relatively new concept—one that may not have been fully appreciated.

In general, Tuntland's subjects rated personal skills higher than content skills. The personal skills and the percentages of subjects who rated them very useful to extremely useful were communication (92.9%), organization (87.8%), motivation (87.8%), time management (83.4%), stress management (70.4%), negotiation (67.4%), public speaking (65.3%), general writing (56.1%), and technical writing (25.5%). These findings suggests that personal skills are at least as important to employers as are content skills. It is also noteworthy that two of the four top-ranking content skills—business and mathematics—belonged to support areas outside of clothing and textiles.

In their study of the clothing and textiles' curriculum content needed for success in fashion marketing careers, Garner and Buckley (1988) surveyed retailers and clothing and textile educators and graduates. They were asked to rate curriculum elements in the clothing and textiles curriculum on

a four-point scale from not important (1) to essential (4). The elements were divided into eight blocks or groups: fashion merchandising, the textile and apparel industry and economics, textiles, clothing construction, apparel design and selection, the social science aspects of apparel, professional preparedness, and support courses. Taking the input of all three groups into consideration, the curriculum items that were rated above 3.5 and that should receive the highest priority in curriculum planning were inventory management and stocking procedures, merchandise buying methods, price-quality relationship in apparel, salesmanship, consumer behavior, self-presentation in business, management, marketing, and speech communication.

If these nine essential curriculum elements, only one—the price-quality relationship in apparel—might be considered the sole domain of fashion merchandising. Although inventory management and stocking procedures, merchandise buying methods, consumer behavior, and salesmanship were part of Garner and Buckley's fashion merchandising block, they can be found in other curricula. The remaining essential curriculum elements—self-presentation in business, management, marketing, and speech communication—were from support areas or were personal skills not necessarily related to fashion marketing.

Curriculum elements rated between 3.0 and 3.5—which should receive second priority—included computer literacy, personnel management, written and oral communication, mathematics, advertising, internships, stock control methods, apparel terminology, fashion promotion and display, textile identification and care, and color concepts. Many of these items were also general in nature and could have been part of any curriculum.

The curriculum elements that were earmarked for removal or de-emphasis were not specifically related to fashion marketing or retailing. They included chemistry, foreign languages, industrial equipment and apparel production methods, pattern making, grading, custom sewing and tailoring, historic textiles and costume, costumes and fabrics from other cultures, and apparel design.

These findings suggests that educators focus on the knowledge and skills needed in today's business world, eliminating many of the courses traditionally included in clothing and textiles/fashion merchandising programs. Retailers appeared to be concerned with daily business functions rather than with theory, clothing construction skills, and history.

Kean (1985-1986) surveyed discount store buyers in order to explore the opportunities for skill development provided by retailers and to determine the importance placed on certain skills. Through a review of literature, Kean identified the skills of decision making, computer integration, leadership, negotiation, interpersonal [communications/relationships], writing, and mathematics. Respondents rated the skills on a five-point Likert scale ranging from extremely important (1) to not important at all (5). They were also invited to add skills to the list.

Kean found that leadership, decision making, and negotiating were the skills most frequently offered by retailers. Buyers themselves selected decision making, negotiating, and interpersonal skills as the three most important business skills. They also gave high ratings to leadership and mathematics. Among skills needed for the future, buyers rated decision making, computer integration, and negotiating—in that order—as most important. As a result of the study, Kean recommended that companies improve training in decision making, leadership, and negotiating and implement training in mathematics, writing, and interpersonal skills. The researcher also suggested that these skills be worked into the merchandising curriculum.

In a study of the attitudes of retailers and college educators toward fashion retail internships, Sheldon (1985-1986) asked retailers to rank intern selection factors and prerequisite courses from not important (1) to essential (5). The intern selection factors, rank order, were personality (4.18), activities and leadership (3.53), major in college related to retailing (3.31), experience in retailing (3.18), and grade point average (3.11). From these findings, Sheldon concluded that retailers are more concerned with activities and leadership than with grades. She suggests that advisors encourage

students to participate in activities that will develop their leadership abilities. Retailers were also more concerned about the quality of the fashion retailing curriculum than they were about whether the school was a two- or four-year institution.

Retailers ranked the prerequisite courses for internships in the following manner: communications/human relations, management, merchandising, math or accounting, merchandise display, retailing structure and strategy, marketing, fashion marketing, fashion theory, advertising and/or promotion, textiles, and computer applications. Although educators and retailers differed on most rankings, both groups rated communications/human relations, merchandising, and management from very important to essential. Sheldon stressed the importance of these three competencies in developing abilities identified in the literature as essential for retail graduates: leadership, supervision, problem solving, business decision making, and the demonstration of effective human relations.

As illustrated in previously-cited studies, many of the selection factors and courses ranked most highly in Sheldon's research do not relate specifically to fashion merchandising. The two top intern-selection factors—personality and activities and leadership—are general in nature. Among the courses, communications/human relations, management, math or accounting, and marketing are ranked higher than fashion marketing, fashion theory, and textiles. Even the top two courses—communications/human relations and management—are not the domain of fashion merchandising.

The trend toward emphasizing personal and professional skills is evident in other fields as well as in clothing and textiles/merchandising. Because graduates from various disciplines—especially business—compete with clothing and textiles graduates for jobs (Tuntland, 1987), it is prudent to be aware of research on other curricula. In a study of the skills needed by business school graduates, Aiken, Martin, and Paolillo (1994) asked senior corporate executives to

rank attributes according to their perceived importance to today's employers. From highest to lowest, the rankings were interpersonal skills, dependability, initiative, problem solving, creative thinking, leadership, verbal communication, team work, written communication, willingness to work hard, ability to learn quickly, computer literacy, promptness, and basic math skills.

Aiken et al. recommended that the business curriculum place more emphasis on communication, problem solving, total quality management (TQM), internships, organizational behavior, ethics, computer applications, technology, speakers, emphasis on high academic standards, and math and statistical skills. Other items to be stressed in the curriculum were increased exposure to functional areas, integration, global awareness, engineering, foreign language skills, exposure to regulatory issues, and economics.

In the Aiken et al. study, executives considered generalist skills more useful than specialist/technical skills. Corporations may prefer graduates with a liberal arts education because of their broader perspective on problem solving and their ability to learn and adapt to different jobs.

Research in accountancy yields similar results. Klein and Levy's (1993) study of curricular needs for accounting indicated that both large and small firms supported training in or experience with internships, public speaking, interpersonal skills, professional ethics, and business structure analysis. All firms also had a high interest in writing skills. The additional educational requirements to be added to the accountancy curriculum are expected to produce graduates with greater levels of technical competency; enhanced capabilities to work in an ever-changing, complex, task environment; and a broader base of education.

Ray, Stallard, and Hunt (1994) investigated the criteria that human resource managers (HRMs) use to evaluate business graduates for employment. HRMs were asked to rate their perceptions of the criteria on a five-point scale from extremely important (5) to not a factor (1). The optimal importance of personal skills was evident in this study as well. Respondents based the

decisions to make the initial contact upon the résumé (4.4), college attended (4.4), cover letter (3.6), major grade point average (GPA) (3.4), overall GPA (3.3), and references (2.7). HRMs ranked initial interview criteria as follows: poise (4.2), neatness of appearance (4.1), attire (3.8), references (3.4), and the presence of contacts within the organization (2.2).

Among the criteria used to evaluate applicants' skills and experience, communications skills ranked the highest: oral (4.6), listening (4.5), interpersonal (4.4), written (4.3), and nonverbal (3.7). Competencies in the "other knowledge and skills" group ranked second. They included job-related technical skills (4.2), human relations skills (4.2), problem solving skills (4.2), and related work experience (3.7). The computer knowledge group had the lowest rankings. The skills were office information systems (3.2), software applications (2.2), computer component parts (2.1), and programming languages (2.1).

Overall, the HRMs in the Ray et al. study ranked their perceptions of criteria for evaluating business graduates as follows: 1) oral communications skills, 2) listening skills, 3) résumé, 4) interpersonal communications skills, 5) written communication skills, 6) problem-solving skills, 7) poise, 8) human relations skills, 9) job-related technical skills, 10) neatness of appearance, 11) appropriate attire, 12) nonverbal communication, 13) work experience, 14) cover letter, 15) references (at interview stage), 16) major GPA, 17) overall GPA, 18) software applications skills, 19) knowledge of office information systems, 20) college attended, 21) references (at initial screening, 22) contacts within the organization, 23) knowledge of computer components, and 24) knowledge of computer languages. The researchers stressed the need for the program to provide opportunities for students to learn about the importance of résumés, cover letters, and grades in the initial screening. They concluded that students also need the opportunity to develop job-related technical skills, human relations skills, and problem-solving skills.

Etiquette is another personal skill that is important to the business community. Schaffer, Kelley, and Goette (1993) queried marketing professionals to determine the level of importance attached to business etiquette, which situations required appropriate skills, and whether business etiquette should be a part of the business school's curriculum. Respondents used a five-point Likert scale to assess the importance of etiquette in various situations. From highest to lowest, the ratings were 1) business communications (telephone calls, letters, etc.), 2) conducting meetings, 3) introductions, 4) interviewing, 5) dining with clients, 6) handshaking, and 7) the use of business cards.

Of the 200 marketing professionals surveyed, 91.1% rated etiquette either very important (56%) or important (35.1%). While only 24.7% of the sample had received training in business etiquette, 79.9% felt that it should be included in the business school's curriculum. Schaffer et al. recommend either adding a business etiquette course to the curriculum or modifying existing courses to include an introduction to business etiquette skills.

Although the clothing and textiles educators in Lind's (1989) study expressed the need for more specialized knowledge, other disciplines are moving toward a more expansive approach to education. Morgan (1993) observed that businesses need managers with broad skills that allow them to evaluate the effects of manufacturing decisions on the company's future success and development. Managers need the ability to research new business opportunities, emerging technologies, and the suitability of a new country for a particular business. Morgan suggests that finance programs take a more holistic approach to business, placing less emphasis on technique and more on the broader regulatory, technical, and cultural forces that affect financial decisions.

In today's international community, employers will increasingly seek professionals with a sophisticated understanding of global economics and of other cultures, religions, languages, political systems, and legal structures (Samson, 1993). In 1993, about 90% of all U.S. businesses confined

themselves to domestic markets (Smith, 1993). As the number of international competitors increases, however, it will become more commonplace for U.S. businesses to consider international markets. Canadian businesses are becoming increasingly international as well (Shengliang & Boatler, 1993). The passage of free trade agreements will also create an additional need for graduates with an understanding of and appreciation for cultural diversity (Wall & Dickerson, 1989). Because of the increase in imports, exports, and off-shore production, these developments are of vital importance to the garment industry. Apparel production curricula, therefore, may need to adopt a more international focus, producing graduates with heightened global awareness and foreign language skills.

Marketing educators have already begun to integrate curricular components that develop global awareness and the competencies associated with transnational business activities (Samson, 1993). These include foreign language skills, an in-depth understanding of other cultures, the ability to apply marketing practices to people living under other political systems or business environments, and an understanding of the ethical requirements for a global, sustainable society. Other marketing programs have established international marketing advisory committees, international marketing courses, degree programs in international business, international study tours and student exchanges, and international business programs for small firms (Ruhland, 1993).

Because internships provide real-world experience (Stanton, 1992), they are among the most highly rated items in many studies. In Garner and Buckley's (1988) investigation of the curriculum concepts important for fashion marketing careers, retailers, educators, and graduates rated internships at the retail sales and management levels important to very important. This rating indicated that internships should receive priority in the clothing and textiles curriculum. The educators and retailers in Hyman-Parker's (1993) study also stressed the need for internships and externships.

In Klein and Levy's (1993) investigation of preferred requirements for future CPAs, employers ranked internships number one on the list of necessary experiences or skills. The senior corporate executives in the Aiken et al. (1994) study of the requisite skills for business school graduates ranked internships fourth among 18 competencies. Communications, problem solving, and TQM were the only competencies that preceded internships.

Exploring the Business Community's Attitudes Toward Clothing & Textiles Programs

In order for internships and other ventures involving external consumers to be successful, there must be cooperation between education and business. Kunz et al. (1992) queried executives of apparel and textile trade associations (AATAs) in an effort to explore new opportunities for cooperation. Of the 99 respondents, 65% saw the need for cooperation between AATAs and educators. Depending upon the proposed project, 77% said that they would be willing to cooperate with educators. AATA executives felt that the relationship should be mutually beneficial, with industry sharing expertise through such means as tours, seminars, consulting, assistance with curriculum development and evaluation, internships, career counseling, contests, and financial support. The benefits that educators could provide industry included assisting with market studies, serving as consultants and speakers, and developing certification programs and cost-cutting designs. Respondents did, however, see more benefits going to educational institutions than coming from them, with industry providing more expertise than they expected to receive in return.

Whereas 20% of the respondents did not see a need for cooperation with educators, 10% were unwilling to cooperate. Their reasons included the perceptions that educators could do nothing for them, that educators did not adequately prepare students to work in the apparel and textile

industry, and that students' perceptions of the real world and of career opportunities were too narrow and unrealistic. Respondents felt that educators needed to broaden students' perspectives on careers beyond apparel design, retail merchandising, and textile science. Some AATA executives reported that they could not understand why they should prefer to work with apparel and textiles programs instead of engineering or other disciplines. They also felt that apparel and textile departments could not satisfy their needs.

Among the 59% of respondents who had worked with university faculty, 45% had worked specifically with apparel and textile educators. Only 13% had sponsored research, though some had provided funding for research and development. Many executives, however, were unaware of the hundreds of apparel and textile programs. They also expressed the need for educators to initiate relationships with industry.

Determination of the Study

Because the garment industry utilizes many of the skills taught in clothing and textiles programs, numerous units now offer or are considering an apparel production specialty. Educators view the apparel production curriculum as a new outlet for their existing knowledge and as a means of keeping clothing and textiles programs relevant to today's world. A review of the status of the apparel industry and of curriculum research, however, indicates that more careful consideration is necessary before committing resources to an apparel production program.

Due to increases in imports and offshore production, the domestic apparel industry is shrinking. The reduction in the industry has resulted in massive layoffs and in the availability of fewer jobs. In addition, the industry has a history of hiring a large percentage of non-professional workers and very few professionals. There is a need for research that will ascertain the kind of positions that manufacturers seek to fill and with whom. Are there professional positions for which

only college graduates are considered? If so, which majors are preferred by the industry? Research on fashion merchandising and retailing positions indicates that some of the jobs for which clothing and textiles graduates prepare are held by employees who attended only high school or community college. Graduates from several other fields—especially business, liberal arts, and marketing—also compete with clothing and textiles graduates for jobs. The same may be true of the apparel manufacturing sector.

In addition, the manner in which the company fills positions may have an impact on the employment of graduates. Industries that traditionally promote from within may be more likely to move persons without degrees into professional positions. Previous research indicates that this is the case with some management positions in merchandising and industry. If this is true of professional positions within the apparel industry, graduates may not be able to compete with contenders who are already ensconced in the company.

The competencies required for jobs in the apparel industry are another concern. Research on merchandising curricula indicates that many of the concepts taught in clothing and textiles programs are not relevant to today's jobs. A study that allows manufacturers to indicate the competencies that they consider most valuable would enable educators to build an apparel production program with more relevant clothing and textiles courses. It could also identify the most salient support areas and personal skills and indicate the proper balance between content and personal skills. This information would be especially valuable at a time when companies seek employees who learn quickly and who have broad enough personal and content skills to initiate, implement, and evaluate a variety of business ventures. Company size and product type may also affect the competencies or skills required.

Because of the increase in imports, exports, and offshore production, global awareness and cultural diversity may be more important to the apparel industry than indicated by previous research

on clothing and textiles programs. While respondents in earlier studies did not consider foreign languages important, today's apparel manufacturers may think differently. New technologies, especially computer-aided design, may also be more important today than previously indicated.

If educators are to make apparel production programs more relevant, they will need increased contact with industry. Research indicates that the amount of time that manufacturers are willing to devote to educational programs depends upon their attitudes toward and previous experiences with educators and institutions (Kunz, Lewis, & Coffin, 1992). These attitudes also impact the manner in which manufacturers view the graduates of certain programs. There is a need for research that probes manufacturers' perceptions of educators, programs, and students and the level of involvement that they seek with institutions, including their willingness to serve on committees and to accept interns.

Because of conditions in the work force and competition for students and funding from other institutions and disciplines, clothing and textiles programs must reexamine the an apparel production curriculum. The proposed research will provide educators with vital information about the nature of the competition confronting both clothing and textiles programs and their graduates. It will also offer insight into the apparel industry's actual hiring needs and the personal and content skills and competencies that manufacturers consider most valuable. In addition, the findings will strengthen the case for either the maintenance of the apparel production specialty in its current state or for the exploration of new directions for apparel-related curricula at the university level. If the findings are positive, they will assist educators in evaluating their resources and in fashioning relevant programs that allow clothing and textiles graduates to compete successfully for jobs in the apparel industry.

Hypotheses

1. Manufacturers will say that community colleges are doing a better job of preparing students to work in the apparel industry than are four-year colleges and universities.
2. Manufacturers will say that faculty in community colleges are more familiar with and attuned to industry's need than are faculty in four-year colleges and universities.
3. Manufacturers will say that faculty in community colleges are more valuable as resource persons for industry than are faculty in four-year colleges and universities.
4. For future professional position, manufacturers will prefer to hire more graduates from disciplines other than those related to home-economics.
5. For future professional positions, manufacturers will be willing to hire persons with less than a bachelor's degree.
6. Manufacturers who have branches, plants, or clients in other countries or that do business with other countries will give higher ratings to (a) foreign language competencies/concepts and (b) understanding other cultures than those without international contacts.
7. Manufacturers will rate support competencies more highly than apparel-related competencies.

8. Manufacturers will rate personal competencies more highly than content (apparel-related and support) competencies.
9. Manufacturers will rate communication competencies (internal written, external written, and oral communications and public speaking) more highly than other competencies.
10. The ratings given to content and personal competencies will not differ with (a) company size, as indicated by number of employees; (b) sales volume; and (c) product type or SIC category.

CHAPTER III

METHODOLOGY

This chapter discusses the manner in which the study was developed and the research design, sample selection process, development of the instrument, procedure, and statistical analysis.

Research Design

The purpose of this research is to determine the future hiring practices of manufacturers for professional positions within the apparel industry. Positions of interest include design, production, promotion, merchandising, marketing, sales, and distribution. These areas were targeted because the positions could be filled by persons with degrees in home-economics-related disciplines. Because accountancy and finance require specialized training, positions in those areas were omitted from this study.

The study will provide information about jobs that apparel manufacturers actually plan to fill in the near or distant future and about the preferred majors and content skills/competencies necessary for those positions. The research will also provide information about manufacturers' perceptions of the level of career preparation provided by community colleges and universities. Because respondents will rate content skills and competencies that are currently included in apparel production curricula, the study will make it possible to assess the value of existing curricular elements. In addition, it will examine differences among the needs of manufacturers as they relate to company size, products manufactured, and international relations.

Because of the nature of the data to be collected, survey research was selected. A telephone questionnaire was developed and administered to college recruiters or other persons responsible for recruiting and hiring persons for professional positions. It will be used to assess differences among the needs and preferences of different apparel manufacturers for different jobs. The instrument will contain both open- and closed-ended questions, enabling respondents to supply vital information rather than simply to react to statements and ideas.

The telephone survey technique was selected because of the historically low return rates for mailed questionnaires that are sent to businesses. Several studies that queried accountants had return rates as low as 25.3% (Cook & Finch, 1994) and 35% (Klein & Levy, 1993). For studies dealing with merchandising and apparel, return rates were similarly low. Garner & Buckley's (1988) study of apparel retailers yielded a return rate of 34%. Kean's (1985) return rate for questionnaires mailed to discount-store buyers was similarly low at 41%. Response rates for telephone surveys, however, tend to be higher, as evidenced by the 90% response rate for executives of apparel and textile trade associations in the Kunz, Lewis, and Coffin (1992) study.

Establishing the Study

This study was undertaken because of the numerous lamentations of clothing and textiles/fashion design educators at four-year institutions that their students were not finding employment within the apparel industry. The researcher also observed that many students who aspire to careers in apparel production often find themselves in retailing positions. Because some people have successfully found positions in the apparel industry, it seemed prudent to determine the actual requirements and preferences of manufacturers themselves.

As a preliminary step, the researcher informally queried educators about the methods used to determine the content of the apparel production curriculum and of the courses therein. Most stated

that they used catalogs from other institutions with similar programs as a reference when designing their courses. Few said that they sought input from persons actually employed in the apparel industry. As the review of literature revealed, there is a preponderance of studies on the development and evaluation in clothing and textiles that have sought input from educators. Few researchers have queried employers about their needs and requirements. Attendance at a 1994 session of the International Textiles and Apparel Association's (ITAA) Four-Year Institution Committee—the purpose of which was to determine textile and apparel core competencies—indicated continued reliance on the same sources. The competencies were determined by educators alone through the use of brainstorming and similar techniques. No one from industry was present to provide input.

In contrast, a review of the curriculum-development literature in business, finance, accounting, and marketing indicated that researchers in these disciplines sought input from professionals rather than from faculty members. In the Ray et al. (1994) study of employment criteria for business graduates, the sample consisted of members of a professional organization. However, educators and other non-practicing members were screened out of the sample, providing input only from practicing professionals.

Another problem that is peculiar to many apparel-production programs is their claim to prepare graduates for a vast range of positions within the industry. College-catalog descriptions of the career opportunities that are available to apparel-production graduates are usually very broad or vague. Many other disciplines, such as nursing and accountancy, concentrate on preparing graduates for fewer and more distinct positions. There is, therefore, a need to determine for which positions manufacturers actually seek apparel-production majors and which competencies are needed for those positions. In addition, there is a need to determine the qualifications for positions to which apparel-production majors aspire.

In view of the foregoing discussion, all indications led to the need for input from apparel manufacturers themselves concerning their employment requirements and preferences. This study will provide much of the needed information by querying apparel manufacturers through survey research.

Sample Selection

Because of current concern about the domestic apparel-manufacturing sector, the population was limited to apparel manufacturers located in the continental United States and Canada. The subjects were persons employed by those apparel manufacturers and who were responsible for recruiting and/or hiring persons for professional positions—those requiring at least a bachelor's degree.

In order to get a comprehensive list of apparel manufacturers, the researcher contacted the American Apparel Manufacturers Association (AAMA). According to the membership chairperson for AAMA, its membership represents approximately 80% of the 23,000 or so apparel manufacturers in the United States. AAMA provided a copy of its most recent membership list (for January 1994) on paper and on floppy diskette in WordPerfect® format. The list contained the company's name and address and the name of its AAMA contact person. Although the researcher requested data about each company's annual income and number of employees, the information was considered confidential and could not be provided. SIC codes or information about the products manufactured was also unavailable.

Although Dun and Bradstreet or a similar agency could have provided a list with complete demographic information, many of the smaller businesses that are not registered would have been excluded from the sample. At a time when small businesses are proliferating (Carey & McLean, 1985; Moore, 1992), the researcher considered it imprudent to omit them.

The AAMA membership list contained 404 names. After the list was examined, several names were removed. These included six references for AAMA members, five educational institutions, and two other organizations. Twenty-six duplicate company references to different persons at the same address were also eliminated. Four names that were associated with neither a company nor an organization were also removed. The five manufacturers that were located outside of the continental U.S. and Canada (one in Columbia and four in Puerto Rico) were eliminated as well.

Other names eliminated from the AAMA membership list included those of four companies that were no longer members. After determining which products were manufactured by the companies listed, two shoe manufacturers were eliminated: The SIC code for shoes does not fall within categories 22 or 23. Altogether, 55 names were removed from the membership list, leaving a total of 349 manufacturers.

Each item on the list of 349 members was numbered. The Select Cases feature in SPSS® for Windows™ 6.1 was used to generate a random sample of 150 of the 349 members. Due to the in-depth nature of the survey, the researcher had originally planned to use a sample of 35. The statistical consultant recommended, however, that a larger sample be drawn in order to offset potential problems in locating subjects and/or gaining their cooperation.

Later developments resulted in the elimination of 13 more companies from the list of 150 subjects. When contacting the selected companies to obtain the names of actual subjects (as described under "Procedure"), the researcher found that three companies had gone out of business, four could not be contacted due to inaccurate telephone numbers or addresses, three would not respond to telephone messages, one had merged with another company in the sample, one was a subsidiary of another company in the sample, one was operated only by family members, and one had sold out to another company. Thus, the final sample to which the questionnaire was administered contained 137 companies.

Development of the Data-Gathering Instrument

The questionnaire was developed according to the guidelines set forth by Dillman (1978). It was originally prepared so that data could be recorded by hand and was later modified for computerized data entry. The questionnaire was divided into six sections: the introduction, demographics, a comparison of community college and university programs and faculty, information about the next two positions to be filled, a rating of the skills/competencies required for the next position to be filled, and an inquiry into the reasons for which more college graduates were not being sought. The latter section was to be completed only for companies with plans to hire fewer than two college graduates.

The introduction contained background information about the survey as well as spaces for the subject's name and telephone number and for call-back information. Most questions had a multiple-choice format from which possible responses could be read to clients or from which their responses could be selected. Other items were assessed by means of five-point Likert scales. The few open-ended questions concerned the names of the next two professional positions to be filled and the two most preferred foreign languages. Each question also had the categories "Other," "Refusal," and "Don't Know." Because AAMA expressed an interest in using the results of the study, the researcher employed AAMA's format for questions involving demographic data. The final version of the questionnaire as it was administered appears in Appendix B.

In order to reduce the interview length, information about the company's location and SIC codes was taken from the subject list and entered into the completed subject records. Only the demographic information necessary to classify the companies, such as the number of employees and total annual revenue, was included on the questionnaire. Questions concerning contact and trade with other countries and the importance of foreign-language skills were included because of the growth of international trade and offshore production.

Identification & Classification of Content & Personal Competencies

A major thrust of the research was to determine the extent to which current apparel-production curricula prepare graduates for jobs in the garment industry. Hence, it was necessary to formulate a list of all concepts, skills, and competencies provided in current apparel-production courses. A similar list was required for support or minor courses. Because the research indicates the tremendous importance of personal skills to career success, a list of personal competencies or skills was needed as well. Respondents could then use a Likert scale to rate the importance of each skill or competency for the position to be filled. The results would serve as a blueprint for building more viable apparel-production programs.

In order to identify the content skills covered in apparel production, fashion design, and related curricula, the names of schools offering bachelor's degrees in those majors or options were sought. These institutions were identified through the Food and Agricultural Education Information System [FAEIS] publication called *Academic Year 1991/1992 Degrees Awarded in Colleges of Home Economics and Academic Year 1992/1993 New Faculty Profiles in Home Economics* (April 1993). This source was selected because it lists colleges and universities according to their majors and the number of students graduated in each major (Table 5 c, page 25; Table 8 c, page 46; and Table 11 c, page 59). The catalogs of schools having at least one graduate in the categories that usually prepare students for jobs in the apparel industry—"Textiles, Apparel, and Clothing, General" and "Fashion/Apparel Design"—were selected for examination. Garner and Buckley (1988) used a similar method to identify colleges and competencies for their study of curriculum content.

Sixty-two colleges were identified through the FAEIS (April 1993) publication. The addresses and telephone numbers of the institutions were located through *America's Best Colleges: 1994 College Guide* (U.S. News & World Report, 1993). Undergraduate catalogs for each

institution were requested by telephone. While most catalogs were free, a nominal fee, usually for shipping and handling, was required for some.

In each catalog, both required and elective courses for students majoring in clothing and textiles, apparel production, and/or fashion design were reviewed for content competencies and skills. Courses within the required or suggested minor and collateral areas were also reviewed. These included industrial engineering, business, marketing, economics, business, art, chemistry, mathematics, and accounting.

The personal skills required for success as a professional were identified through a review of studies and literature relating to job skills (Aiken et al., 1994; Beery, 1980; Chambers, 1986; Cook & Finch, 1994; Fair et al., 1990; Finn, 1995; Garner & Buckley, 1988; Hyman-Parker, 1993; Klein & Levy, 1993; Lind, 1989; Ray et al., 1994; Ruhland, 1993; Schaffer et al., 1993; Sharma & Trankina, 1995; Sheldon, 1985; Shengliang & Boatler, 1993; Smith, 1993; Tuntland, 1987). The most recent of these studies were done through departments or schools of marketing, finance, and business administration (Aiken et al., 1994; Cook & Finch, 1994; Klein & Levy, 1993; Ruhland, 1993; Schaffer et al., 1993; Shengliang & Boatler, 1993; Smith, 1993). The remainder of these studies were related to specifically to home economics, human ecology, merchandising, and clothing and textiles (Beery, 1980; Chambers, 1986; Fair et al., 1990; Garner & Buckley, 1988; Hyman-Parker, 1993; Lind, 1989; Ray et al., 1994; Ruhland, 1993; Tuntland, 1987). Other information was gleaned from publications geared toward scientists (Finn, 1995; Sharma & Trankina, 1995).

All skills were classified as apparel-related competencies/skills, support-area content competencies/skills, or personal competencies/skills. The original plan was to randomly arrange the skills into one list in order to keep subjects from focusing on the category. In order to assuage respondent fatigue, however, Dillman (1978) suggests that very long list be divided into several

sections. Hence the competencies/skills were divided into the original three categories and alphabetized. The three lists of competencies/concepts appear below.

Apparel-Related Competencies, Concepts, & Skills

1. Apparel production assembly processes
2. Clothing needs of individuals throughout the life cycle
3. Computer applications for the garment industry
4. Couture or designer sewing techniques
5. Development of a portfolio of original design work
6. Draping on the form to create original designs
7. Evaluation of garment quality
8. Factors affecting the domestic textile and apparel industry
9. Factors affecting the foreign textile and apparel industry
10. Fashion demonstration and sales techniques
11. Fashion illustration
12. Fashion merchandising
13. Fashion promotion and advertising
14. Fashion theory
15. Fitting
16. Flat pattern design techniques
17. Garment construction using industrial equipment
18. Garment construction using home-sewing equipment
19. Garment costing or cost analysis
20. Garment design and development

21. Garment specification writing
22. History of costume
23. History of textiles
24. Internship experience with a textile or apparel manufacturer
25. Marker making
26. Organization and interrelationship of the textile, apparel, and retail industries
27. Original fabric design using weaving, knitting, or non-woven techniques
28. Original textile surface design using fabric printing and dyeing techniques
29. Pattern alterations
30. Pattern drafting
31. Pattern grading
32. Social, psychological, and economic forces that affect clothing behavior
33. Tailoring
34. Textile testing
35. Textiles, including the identification, performance, selection, and care of fibers, yarns, fabrics, and finishes
36. The cross-cultural study of clothing and textiles
37. Visual merchandising or display techniques

Support or Minor Competencies, Concepts, & Skills

1. Art, including basic design, figure drawing, and other techniques
2. Business, ethics, and public policy
3. Chemistry
4. Foreign language

5. General management
6. Mathematics or accounting
7. Organization, ownership, and operation of a manufacturing firm
8. Personnel or human resource management
9. Principles of economics
10. Principles of marketing
11. Quality control
12. Retail management
13. Self presentation in business
14. Strategic planning
15. Total quality management (TQM)
16. Understanding other cultures

Personal Competencies, Concepts, & Skills

1. Creative thinking
2. Decision-making skills
3. External written communications, such as preparing annual reports, press releases, and other promotional materials
4. Internal written communications, such as preparing in-house reports and memos
5. Leadership
6. Listening
7. Motivation
8. Negotiation
9. Oral communications on an individual basis or in a group setting

10. Organization
11. Problem solving
12. Public speaking to an external audience
13. Salesmanship
14. Stress management
15. Teamwork
16. Time management

Pilot-Testing & Refinement of the Instrument

Pilot test subjects were drawn from the pool of companies that were not selected for the random sample. One college recruiter volunteered to participate in the pilot test. Although AAMA provided the names of several other potential volunteers, the researcher was unsuccessful in contacting them. Several telephone messages were never answered and others were answered two to four weeks later—after the pilot testing was complete. Attempts to reach other potential pilot-test subjects with whom the researcher was familiar were also unsuccessful. The researcher was able to offset the problem of having a small pilot-test group by obtaining input on the questionnaire from AAMA and from faculty members and others who had several years of industry experience.

The questionnaire was pilot tested under actual conditions, as prescribed by Dillman (1978). The subject was contacted by telephone so that an appointment for the interview could be arranged. The questionnaire was then administered by telephone at the designated time. Afterward, the respondent was asked for his reaction and suggestions for improvement.

The results of the pilot test indicated that the questionnaire was much too long. The interview lasted 38 minutes. As a result, it had to be shortened to 10 to 12 minutes. It also became apparent that college recruiters and other human resource managers might not be familiar with the

company's SIC code. For this reason, the SIC codes were obtained through other sources and added to the data set after the interviews were completed.

The original instrument queried respondents about the recruitment process and about competencies required for the last two positions filled. The respondent pointed out that whereas human resource persons know their future hiring needs, they may not remember the details of past hires or have that information readily available. Omitting this section made it possible to reduce the interview time by more than half. The questionnaire was also modified to gather in-depth information about one—rather than two—future positions. In addition, the pilot test aided in the simplification and clarification of the language used on the instrument.

The refined instrument was then taken to the Mississippi State University Social Science Research Center's (SSRC) Survey Research Unit, which was hired to collect the data. The SSRC was selected because of its considerable, international experience in survey research. The agency also has state-of-the-art equipment that enables the staff to collect data with maximal efficiency.

The SSRC consulted with the researcher to further refine the questionnaire. In order to make the questions easier to understand, all five-point Likert scales were replaced by three-point scales that utilized words rather than numbers. Instead of rating the competencies and concepts on a scale of one to five, they were rated "Not Important," "Important," or "Very Important." In addition, the introduction was shortened. The modified questionnaire was tested and timed by the SSRC staff. Interviews with the refined and shortened questionnaire took 10 to 12 minutes.

Procedure

Human subjects approval for the study was obtained from the University of Tennessee's Office of Research Administration. Because of the possibility that identifiers could be linked to the companies involved, the project was approved as an expedited Form B. Human subjects approval

was also obtained from Mississippi State University, the site at which the data was collected. The letter of introduction informed subjects about the nature and purpose of the study and guaranteed their anonymity (see Appendix A). The telephone introduction to the interview advised subjects of their right to refuse to answer questions of a sensitive nature. The SSRC protects the anonymity of each subject by assigning a random number to each record. Even the researcher cannot match subjects with their records. Only the SSRC is privy to that information, should it be required.

As described under Sample Selection, the sample was randomly selected from AAMA's current membership list. The list was supplied on floppy diskette in WordPerfect's mail-merge format. After the 150 members of the sample were selected, the remainder of the names were removed from the list. Because of the manner in which the list had been prepared, the records could not be alphabetized by company name or otherwise manipulated. The data was, therefore, re-entered using WordPerfect's mail-merge and table features. This made it possible to utilize the list to personalize the letters of introduction and envelopes. Other information added to the list included the subject's name, address, telephone number, and SIC code(s).

Telephone numbers and product information for about 60% of the companies were obtained from the *AAMA 1994 Directory*. The AAMA membership chairperson provided that information for another 20% of the companies that were not listed in the AAMA directory. Directory assistance provided the remaining telephone numbers.

Because SIC codes are used by the government and other agencies, including AAMA, to classify businesses by function and by product manufactured, they were used in the current study. The *AAMA 1994 Directory*, however, only lists products by type, such as "women's sportswear" or "children's sleep wear." The SIC codes for member companies were also unavailable through the AAMA headquarters.

The four-digit SIC codes for 61 of the 150 companies were obtained from *Standard & Poor's Register of Corporations, Directors and Executives* (1995). Others SIC codes were obtained through the PhoneDisc® Business CD ROM, which lists U.S. companies by name, address, telephone number, and one SIC code. Many manufactures, however, fall into more than one SIC category. Therefore, information about the products manufactured was requested during the initial telephone contact with the selected companies, as described below. This information was used to assign three-digit SIC codes to each company. These made it possible to distinguish among broad product categories, such as total knit apparel mills (225); men's and boys' suits and coats (231); women's, misses', and juniors' outerwear (233); and millinery, hats, and caps (235). Three-digit codes were used because of the difficulty in assigning the fourth digit. A review of the four-digit codes that were available indicated that there is great variety in the assignment of codes and, therefore, a large potential for error.

In order to increase the response rate for telephone surveys, Dillman (1978) suggests that letters of introduction be addressed to a specific person rather to a company or department. The 25.3% response rate for Cook and Finch's (1994) survey of accounting supervisors strengthens the case for this procedure. The response rate for that study, in which the researchers sent questionnaires to the firms and asked that they be directed to persons in supervisory positions, was the lowest of all studies reviewed for the current project.

The researcher contacted each company by telephone and asked for "the name of the person who is responsible for recruiting and/or hiring college graduates for positions in the areas of management, design, production, merchandising, marketing, sales, and distribution—in other words, everything except accountancy and finance." At that time, the researcher also verified the address and telephone number of the person to be interviewed and asked about the products manufactured. This process uncovered numerous errors with area codes, telephone numbers, and addresses. Several calls

to various locations were sometimes necessary in order to obtain the name of the correct contact person. During this process, 13 companies were eliminated from the sample, as explained under Sample Selection.

In order to improve the response rate, Dillman (1978) suggests that the letters of introduction and envelopes be personalized rather than mass-produced. The mail-merge function in WordPerfect 6.1 was used to personalize the letters and envelopes, giving them the appearance of having been individually typed. The letters were printed on University of Tennessee stationery (see Appendix A). Postage stamps were affixed to the envelopes rather than sending them through a meter. The letters were mailed one week before the telephone interviews began.

The list of companies, contact persons, telephone numbers, addresses, and SIC codes and the questionnaire were turned over to the director of the SSRC's Survey Research Unit (SRU) for review and preparation. The format of the questionnaire was then revised so that data could be entered directly by computer. The SRU director suggested shortening the introduction and other modifications that made the questionnaire easier to administer and for respondents to answer. These changes are discussed under Development of the Data-Gathering Instrument. In addition, the SRU also performed several trial runs to estimate and improve timing.

The SRU director supervised the briefing and training of the interview staff, which consisted of five professional interviewers. The interviewers then practiced with the questionnaire until they became familiar with it.

The telephone contacts took place Monday through Friday between the hours of 8 a.m. and 5 p.m. between May 30 and June 7, 1995. If possible, interviewers collected the data during the initial contact. If that time was inconvenient, they made appointments to call back. In the event that the person listed on the subject list was unable or unwilling to be interviewed, the interviewers were instructed to ask for an alternate subject.

The SSRC attempted to contact each company/subject a maximum of five times, after which the company was excluded from the list. In the interest of time, subjects who requested that the questionnaire be sent by facsimile machine or mailed to them were also excluded. It was not feasible to send the instrument by facsimile machine because of both its length and format. Reformatting the questionnaire for self-administration and waiting for its return would have taken more time than was available for the data-collection process.

When the data collection was complete, the SSRC checked the data for accuracy and ran frequency distributions for all items. Items provided to the researcher included the raw data, SPSS syntax file, frequencies, and a status report on the action taken with each subject.

Statistical Analysis

SPSS version 6.1 for Windows was selected for the data analysis. For Hypotheses 1, 2, 3, 6, and 9, *t* tests were planned. Chi square tests were planned for Hypotheses 4 and 5. For Hypothesis 8, a repeated-measures analysis of variance (ANOVA) and a Newman-Keuls post hoc test were planned. A series of one-way ANOVAS was planned for Hypothesis 10.

Limitations of the Study

1. The sample was drawn from the membership of AAMA. This made it possible to generalize the findings only to other members of AAMA and not to the 20% of U.S. apparel manufacturers who were not members.

2. The study was limited to apparel manufacturers located within the continental United States and Canada, thus omitting companies located in other parts of both countries, such as Hawaii and Puerto Rico.
3. None of the Canadian companies that were members of AAMA were selected for the sample. As a result, the sample is only representative of apparel manufacturers within the continental United States.
4. The respondents were limited to those who were available and/or who responded to the survey during the period (May 30 through June 7, 1995) over which it was conducted. Companies that were closed for vacation or that had contact people who were unavailable during that time period could not be included.
5. Due to the nature of FAEIS listings, all schools that offered clothing and textiles or fashion design programs were not identified. Their catalogs were, therefore, not reviewed.

CHAPTER IV

RESULTS

Of the 137 companies in the random sample, 5 did not manufacture their own products. This reduced the number of eligible manufacturers to 132. There were 91 respondents, yielding a response rate of 69%. Of the 41 remaining manufacturers, 10 said that they would complete the survey if it were sent by facsimile machine, 4 requested a mailed questionnaire, 18 refused to participate, and 9 could not be reached during the interview period. Time constraints made it infeasible to rewrite the questionnaire for self-administration, send it to the subjects, and await its return or to wait for prospective respondents who could not be reached during the specified interview period. This chapter contains a description of the sample of 91 manufacturers and the statistical analysis of the project.

Description of the Sample

The companies represent all seven of AAMA's geographic regions of the continental United States, with 21% from the Northeast, 21% from the Midwest, 45% from the four southern areas, and 13% from the West (see Table 3). Their annual sales volumes also spanned all categories, with 24% (22) earning less than \$35 million, 20% (18) earning \$35-99 million, and 24% (22) earning \$100 million or more. For the remaining companies, 20% (18) of the subjects did not know the company's annual sales volume, and 12% (11) refused to respond.

Table 3
Location of Apparel Manufacturers by Geographic Region (*N* = 91)

Geographic Region	Frequency	Percentage
Northeast (CT, ME, MA, NH, RI, VT, DE, MD, NJ, NY, PA)	20	22%
Midwest (IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI)	19	21%
South - Area 1 (NC, SC, VA, WV)	12	13%
South - Area 2 (AL, FL, GA, MS)	17	19%
South - Area 3 (KY, TN)	8	9%
South - Area 4 (AR, LA, OK, TX)	4	4%
West (AZ, CO, ID, MT, NV, NM, UT, WY, CA, HI, OR, WA)	11	12%
Total	91	100%

The sample included companies of all sizes, as indicated by the number of employees at all sites. Of the 91 companies, 6% (5) had fewer than 50 employees, 7% (6) had 50 to 99, 15% (14) had 100 to 249, and 14% (13) had 250 to 499. More than half of the companies—57% (52)—had 500 or more employees. One subject (1%) refused to divulge the number of employees.

The companies manufactured a representative sample of apparel, including underwear and outerwear for men, women, and children, as well as uniforms, work clothing, hosiery, and hats (see Table 4). Other manufactured items included swim wear, embroidered and printed apparel and accessories, military garb, hospital gowns and uniforms, sleep wear, and accessories. Several manufacturers produced clothing for more than one group, such as men's, women's and children's wear or men's and women's wear. Most produced garments that were classified under two or more three-digit SIC codes.

Table 4
Categories of Apparel and Related Products Manufactured ($N = 91$)

Product & SIC Code	Frequency	Percentage
Men's & boys' (231, 232, 238)	24	26%
Men's & boys'; women's, misses', & juniors' (231, 232, 233, 238)	21	23%
Women's, misses', & juniors' (233, 238, 239)	10	11%
Girls', children's, & infants' (234, 236)	10	11%
Men's & boys'; women's, misses', & juniors'; girls', children's, & infants' (231, 232, 233, 234, 236)	9	10%
Hats, other (235, 229)	7	8%
Women's, misses', & juniors'; girls', children's, & infants' (233, 234, 236)	5	5%
Knits (221, 222, 223, 228)	2	2%
Other (238)	2	2%
Men's & boys'; children's (231, 232, 234, 236)	1	1%
Total	91	100%

Note. The companies listed in each category manufactured under at least one of the SIC codes listed. Companies manufacturing in two or more categories were classified under at least two of the codes listed. For a detailed listing of SIC codes related to apparel, see chapter I.

Most companies performed a multiplicity of functions, including merchandising and product development, piece-goods manufacture, production, marketing, and wholesale and retail sales (see Table 5). Other functions included cutting, accounting, and quality control.

The subjects held a variety of positions, as indicated in Table 6. The majority were vice presidents; human resource/personnel directors or assistant directors; and human resource/personnel officers, assistants, or secretaries. The 14 positions listed as "Other," included comptroller, sales manager, personnel manager, director of research and development, advertising manager, assistant to

the chief executive officer, director of employee relations, senior program developer, executive assistant, customer service representative, and accounting manager. The positions of personnel manager and director of employee relations are both listed in Table 6 under "Human resource/personnel director/assistant director."

The sample contained companies with both domestic and international interests. Of the 80 (88%) companies that had other branches or plants, 59% (54) had branches or plants in other states, provinces, or territories. Another 37% (34) had branches or plants in other countries. One subject (1%), however, did not know whether the company had branches in other countries. Whereas 25% (23) of the subjects who were employed by companies with branches in other countries reported that U.S. citizens were assigned to work at those locations, one (1%) did not know. Only 11% (10) of the subjects, however, reported that employees with foreign-language skills got preference for assignments in other countries. Four (4%) did not know.

Table 5
Functions Performed by the Sample Companies (N = 91)

Function	Frequency	Percentage
Merchandising/product development	74	81%
Piece goods manufacture	53	58%
Production	83	91%
Marketing	72	79%
Sales and distribution to retailers or wholesalers	80	88%
Retail sales	35	38%
Other (cutting, cutting portion of manufacturing, sewing applications, accounting, & quality control)	9	10%
Don't know	1	1%

Table 6
Positions Held by Respondents (*N* = 91)

Position	Frequency	Percentage
President	9	9%
Owner	1	1%
Chief executive officer	2	2%
Vice president/vice chairperson	20	22%
Secretary (of the corporation)	2	2%
Treasurer	1	1%
Human resource/personnel director or assistant director	28	31%
Plant manager/assistant manager	5	5%
Department manager/assistant manager	1	1%
Human resource/personnel officer/assistant/secretary	10	11%
Comptroller	3	3%
Sales manager	1	1%
Director of research & development	1	1%
Advertising manager	1	1%
Assistant to the chief executive officer	1	1%
Senior program developer	1	1%
Executive assistant	2	2%
Customer service representative	1	1%
Accounting manager	1	1%
Total	91	90%

More than 75% (69) of the subjects reported that their companies did business with firms or clients in other countries, whereas 3% (3) did not know. Of these subjects, only 19% (17) reported that employees with foreign-language skills got preference for assignments that involve other countries. The majority (47 or 52%) reported that persons with foreign-language skills did not get preference. The remaining 6% (5) did not know.

Attitudes Toward Two- & Four-Year Educational Institutions

Manufacturers' opinions of the level of preparation provided by educational institutions and of faculty members spanned the spectrum. They were first asked to rate how well two-year and four-year institutions prepared students to work in the garment industry on a three-point scale (1 = not very well; 2 = well; and 3 = very well). The mean responses appear in Table 7. Whereas 44% (40) of the 90 manufacturers who responded to this question said that two-year or community colleges did not prepare students very well to work in the garment industry, 12% (11) felt that these institutions prepared students very well. Four-year institutions fared somewhat better, with 19% (17) of the manufacturers saying that these colleges did not prepare students very well and 38% (34) saying that they prepared students very well. A sizable percentage of manufacturers said that they did not know how well either kind of institution prepared students to work in the garment industry. This figure was 19% (17) for two-year programs and 10% (9) for four-year programs. Hypothesis 1 tests whether the ratings given to the preparation afforded by two- and four-year programs differed significantly.

Manufacturers rated the degree to which faculty members are familiar with and attuned to the garment industry's needs on another three-point scale (1 = not familiar; 2 = somewhat familiar; and 3 = very familiar) (see Table 7). Whereas 47% (42) of the 90 respondents said that two-year faculty were not very familiar with industry's needs, 10% (9) felt that they were very familiar. The figures for four-year colleges were higher, with 34% (31) of the manufacturers rating faculty as not

very familiar with industry's needs and 19% (17) as very familiar. Many respondents said that they did not know how familiar faculty were with industry's needs—21% (19) for two-year colleges and 16% (14) for four-year colleges. Hypothesis 2 tests whether there is a significant difference in the ratings on familiarity with industry's needs given to faculty in two- and four-year colleges.

Manufacturers rated the value of educators as resource persons for the garment industry on a third three-point scale (1 = not valuable; 2 = somewhat valuable; and 3 = very valuable) (see Table 7). Again, four-year faculty received higher ratings. Half of the subjects (45) rated two-year faculty not very valuable. This figure was 34% (31) for four-year faculty. Two-year faculty were considered very valuable as resource persons by 14% (13) of the subjects, whereas four-year faculty were considered very valuable by 24% (22). An almost equal percentage of respondents said that they did not know how valuable faculty were as resource persons—13% (12) for two-year faculty and 12% (11) for four-year faculty. Hypothesis 3 tests the significance of the difference in ratings given to the value of faculty in two- and four-year colleges as resource persons.

For both two- and four-year colleges, manufacturers' responses fell below 2 on all but one item—how well four-year institutions prepared students to work in the industry. These results indicate that manufacturers have a relatively low opinion of educational institutions and faculty.

Future Hiring Plans

Most manufacturers (51) indicated plans to hire college graduates in the near future, with 15% (14) planning to hire one graduate and 41% (37) planning to hire two or more. One third of the sample (30), however, do not plan to do so. The remaining 9 (10%) respondents did not know.

Throughout this report, the next two available jobs will be designated Positions 1 and 2.

Table 7
Ratings of Two- & Four-Year Institutions & Faculty (*n* = 90)

Item & Type of Institution	Mean	<i>SD</i> ^a	Mode	Frequency
<i>Preparation of students for industry</i> ^b				
Two-year colleges	1.60	.74	1	73
Four-year colleges	2.21	.77	3	81
<i>Faculty familiarity with industry</i> ^c				
Two-year colleges	1.54	.71	1	71
Four-year colleges	1.82	.78	1	76
<i>Value of faculty as industry resource</i> ^d				
Two-year colleges	1.59	.76	1	78
Four-year colleges	1.89	.82	1	79

^a *SD* = standard deviation

^b Mean based upon a scale of 1-3, on which 1 = not well; 2 = well; and 3 = very well.

^c Mean based upon a scale of 1-3, on which 1 = not familiar; 2 = somewhat familiar; and 3 = very familiar.

^d Mean is based upon a scale of 1-3, on which 1 = not valuable; 2 = somewhat valuable; and 3 = very valuable.

Of the 51 manufacturers who planned to hire one graduate (for Position 1), 65% (33) planned to do so within six months (see Table 8). Another 29% (15) said that they would wait at least a year. One subject (2%) reported that the position would be filled when he retires, and two others (4%) did not know when. Among the 37 manufacturers who planned to hire at least one more college graduate (for Position 2), 81% (30) planned to do so within six months (see Table 8). Whereas 14% (5) planned to wait at least a year, one (3%) would do so when funds became available. Another subject (3%) did not know when Position 2 would be filled.

For both openings, manufacturers listed a variety of positions, which ranged from entry-level to upper management (see Tables 9 and 10). Positions in sales, management or administration,

engineering, and marketing dominated in both instances. Among the 88 positions specified, there were four (5%) openings each for design and merchandising.

When recruiting for jobs in the apparel industry, manufacturers sought employees with a variety of backgrounds. For each position, manufacturers were asked which majors they would consider. Table 11 lists the majors that manufacturers would consider for Positions 1 and 2. Business administration, marketing, computer science, and engineering—in that order— were the most popular majors.

The results indicated that manufacturers would consider apparel- and home-economics-related majors for 55% (28) of the jobs listed for Position 1 and for 68% (25) of the jobs listed for Position 2. Among these majors, manufacturers selected apparel production most often, having considered it for 20% (10) of the 51 jobs for Position 1 and 19% (7) of the 37 jobs for Position 2. Fashion design and retailing garnered equal support, each having been considered for 10% (5) of the jobs for Position 1 and 16% (6) for Position 2. Manufacturers considered a textiles major for 4% (2) of the jobs for Position 1 and 8% (3) of the jobs for Position 2. Home economics was considered for one (2%) job for Position 1 and none for Position 2. Hypothesis 4 tests whether manufacturers selected other majors significantly more than those related to apparel and home economics.

Table 8
Anticipated Schedule for Filling Positions 1 & 2

When Positions Will Be Filled	Frequency	Percentage
<i>Position 1</i>		
Immediately	12	24%
Within 6 months	18	35%
Within 6 months to a year	3	6%
In more than a year	15	29%
Other	1	2%
Don't know	2	4%
Total for Position 1	51	100%
<i>Position 2</i>		
Immediately	10	27%
Within 6 months	11	30%
Within 6 months to a year	9	24%
In more than a year	5	14%
When funds are available	1	3%
Don't know	1	3%
Total for Position 2	37	100%

Table 9
Positions for Which Manufacturers Sought Employees With Bachelor's Degrees (Position 1)
(n = 51)

Position	Frequency	Percentage
Administration/management	4	8%
Business manager	1	2%
Computer science	1	2%
Customer service	2	4%
Design	1	2%
Division head	1	2%
Engineering (including industrial, staff, management trainee, and product development)	11	22%
Front line supervisor	1	2%
Junior clerical	1	2%
Marketing	5	10%
Merchandising	2	4%
MIS/MIS ^a assistance and development	2	4%
Plant management	2	4%
Production management	2	4%
Production planning	1	2%
Purchasing	1	2%
Quality control	1	2%
Sales	9	18%
Total quality coordination	1	2%
Warehouse management	1	2%
Refusal	1	2%
Total	51	100%

^aMIS = management information systems.

Table 10
Positions for Which Manufacturers Sought Employees With Bachelor's Degrees (Position 2)
(n = 37)

Position	Frequency	Percentage
Administration/management (including assistant manager, business administration, & director of Mexico operations)	4	11%
Customer service director	1	3%
Cutting room management	1	3%
Data processing	2	6%
Design	3	9%
Engineering (including 2 industrial)	4	11%
Entry level	1	3%
Human resources	1	3%
Information	1	3%
Marketing	2	6%
Merchandising	2	6%
Office assistant	1	3%
Plant management	1	3%
Production control	1	3%
Purchasing	1	3%
Quality control	1	3%
Sales	7	20%
Transport	1	3%
Other (material management & no preference)	2	6%
Total	37	100%

Table 11
Majors Preferred for Positions 1 & 2

Major	Frequencies	
	Position 1 ^a	Position 2 ^b
Accountancy	3 (6%)	1 (3%)
Apparel production	10 (20%)	7 (19%)
Art	1 (2%)	1 (3%)
Business administration	23 (45%)	20 (54%)
Computer science	12 (24%)	7 (19%)
Economics	1 (2%)	0 (0%)
Education	0 (0%)	0 (0%)
Engineering	9 (18%)	5 (14%)
Fashion design	5 (10%)	6 (16%)
Finance	1 (2%)	1 (3%)
Home economics/clothing & textiles	1 (2%)	0 (0%)
Industrial technology	7 (14%)	4 (11%)
Liberal arts	2 (4%)	0 (0%)
Marketing	17 (33%)	12 (33%)

^a $n = 51$

^b $n = 37$

Table 11
(continued)

Major	Frequencies	
	Position 1^a	Position 2^b
Merchandising	5 (10%)	5 (14%)
Retailing	5 (10%)	6 (16%)
Textiles	2 (4%)	3 (8%)
Other ^c	2 (4%)	1 (3%)
Don't know/refused	1 (2%)	1 (3%)

^a $n = 51$

^b $n = 37$

^c For Position 1, "material management" and "no preference" were mentioned for "other." For Position 2, "product quality" was mentioned for "other."

Table 12 lists the positions for which manufacturers would consider the various majors related to apparel and home economics. As previously indicated, apparel production was one of the more frequently-selected majors. However, respondents may not have been considering only apparel production majors that were part of apparel or home economics programs. The positions listed under apparel production in Table 12 include engineering and quality control. This would indicate that the respondents may have been focusing on apparel production curricula that are administered through industrial engineering programs. In Table 12, "engineer" is also listed for both positions under the textiles major. Here, again, the subjects may have been thinking about options within engineering programs, such as polymer engineering, rather than those related to apparel or home economics.

Whereas degrees from specialties related to home economics would be considered for several positions, the home economics major was considered for only one job—quality control (see Table 12). In addition, sales positions, which tend to be general in nature, were listed for every major except home economics.

In addition to competition from persons in various majors, college graduates who seek careers in the apparel industry face competition from persons without degrees. For Position 1, 63% (32) of the 51 manufacturers indicated that they would consider hiring someone without a bachelor's degree, and 35% (18) said that they would not consider doing so. The remaining manufacturer (2%) did not know. For Position 2, 65% (24) of the manufacturers said that they would consider hiring someone without a bachelor's degree, and 35% (13) said that they would not. Hypothesis 5 tests whether a significant number of manufacturers would be willing to hire someone without a bachelor's degree for Positions 1 and 2.

Table 12
Positions for Which Majors Related to Apparel & Home Economics Would Be Considered

Major	Position 1^a	Position 2^b
Apparel Production	Engineer Production planner Manager Product development or engineering Total quality coordinator Sales Industrial engineer/management trainee Quality control Administration Refusal (confidential)	Cutting room manager Assistant manager Merchandising Industrial engineer Sales
Fashion Design	Design Sales Division Head Quality control Administration	Design/designer (3) Merchandising (2) Sales
Home Economics/ Clothing & Textiles	Quality control	None
Merchandising	Sales (2) Marketing Administration Sales associate	Sales (2) Merchandising Designer Office assistant
Retailing	Sales (2) Division head Administration Sales associate	Sales Merchandising Designer Administration Business administration Office assistant
Textiles	Engineer Production manager	Sales Merchandising Engineer

^a *n* = 51

^b *n* = 37

The 44 manufacturers who planned to hire fewer than two college graduates were asked why they did not plan to do so (see Table 13). The most frequently cited reasons were the ability to find qualified persons without degrees (23%), the company's ability to provide the necessary training (23%), and in-house promotions and training (20%). No one selected "College programs focus too much on women's wear" as a reason. There were 18 responses for "Other," which are listed below:

- No openings (5)
- Prefer a college degree but will hire people with experience. Will train inexperienced persons, if necessary, to fill positions. Local colleges provide little help.
- No need—turnover is low
- No need for them (2)
- No need at the moment or future. We're too small.
- Do not require college graduates
- Not needed. Business is stable.
- No need and nothing is coming open
- Slots are filled within our range.
- No need for anyone in the near future
- Family business with three management positions.
- Shrinking industry
- Mostly hire people with experience in the apparel industry
- No need for any. Do not have the volume to hire at this point or in the foreseeable future.

Table 13
Manufacturers' Reasons for Not Hiring More College Graduates (*n* = 44)

Reason	Frequency	Percentage^a
College graduates would require too high a salary	2	5%
There are few or no applicants with college degrees	6	14%
The company prefers to promote and train from within	9	20%
The company can find persons without degrees who have the needed qualifications	10	23%
The company can provide the necessary training.	10	23%
College graduates do not have the required skills or qualifications	5	11%
College apparel programs focus too much on women's wear	0	0%
Don't know	3	7%
Other	18	41%

^a Percentages do not add up to 100%.

The results of the survey indicate that jobs may be scarce in the apparel industry because of competition from several college majors, from persons without degrees, and from persons who are already ensconced in the company. The employment situation is further complicated by the general scarcity of jobs, which seems to be a trend.

Evaluation of Content & Personal Competencies

The 51 manufacturers who planned to hire at least one college graduate were asked to rate the value of 69 competencies, concepts, and skills for Position 1. These competencies were divided into three groups: apparel- and home-economics related, support, and personal. Subjects rated each

competency on a three-point scale (1= not important, 2 = somewhat important, and 3 = very important).

The group of 51 respondents included only one company with fewer than 50 employees and one company with 50-99 employees. As a result, most of the responses represent manufacturers with 100 or more employees. All sales volumes and all product categories, however, were represented.

Apparel-Related Competencies

The manufacturers rated 37 apparel-related competencies. Table 14 lists their means, standard deviations, and modes. The highest mean rating—2.41— went to computer applications for the garment industry. Other highly-rated items included garment costing (2.35), internship with an apparel manufacturer (2.22), and garment quality (2.16). According to the original review of AAHE programs, few institutions offered computer applications for the garment industry, garment costing, garment specification writing, and internships with apparel manufacturers. Figure 3 illustrates the means of the top 10 apparel-related items.

Fashion illustration received the lowest rating—1.27—in the apparel group. This was also the lowest rating among all three competency groups. Other lowly-rated items included the history of costume (1.29), garment construction using home-sewing equipment (1.29), draping (1.29), and tailoring (1.37). The 10 lowest-rated apparel-related competencies appear in Figure 4. Whereas the top 10 items are largely scientific and business-oriented, the 10 lowest-ranking items are more creative and labor-intensive.

Table 14
Means, Standard Deviations, Modes, & Frequencies for Apparel-Related Competencies for Position 1 ($n = 51$)

Apparel-Related Competency/Concept	Mean^a	SD^b	Mode	n^c
Apparel production assembly processes	2.12	.72	2	50
Clothing needs of individuals throughout the life cycle	1.59	.70	1	49
Computer applications for the garment industry	2.41	.70	3	49
Couture or designer sewing techniques	1.51	.62	1	49
Development of a portfolio of original design work	1.39	.67	1	49
Draping on the form to create original designs	1.29	.59	1	49
Evaluation of garment quality	2.16	.85	3	49
Factors affecting the domestic textile and apparel industry	1.96	.73	2	49
Factors affecting the foreign textile and apparel industry	1.78	.74	1/2 ^d	49
Fashion demonstration and sales techniques	1.76	.85	1	49
Fashion illustration	1.27	.53	1	49
Fashion merchandising	1.73	.78	1	49
Fashion promotion or advertising	1.69	.82	1	49
Fashion theory	1.51	.62	1	47
Fitting	1.67	.83	1	49
Flat pattern design techniques	1.63	.70	1	49
Garment construction using industrial equipment	2.04	.90	3	49
Garment construction using home-sewing equipment	1.29	.50	1	49
Garment costing or cost analysis	2.35	.79	3	49

^a The mean is based on a scale of 1-3 (1 = not important; 2 = somewhat important; and 3 = very important). Responses of "Don't Know" and refusals were not calculated into the mean.

^b SD = standard deviation

^c n = the number of subjects who gave a response of 1-3 to this item.

^d Bimodal distribution: 1 and 2

Table 14
(continued)

Apparel-Related Competency/Concept	Mean^a	SD^b	Mode	n^c
Garment design and development	1.90	.77	2	49
Garment specification writing	1.92	.76	2	49
History of costume	1.29	.61	1	49
History of textiles	1.37	.53	1	49
Internship experience with a textile or apparel manufacturer	2.22	.71	2	49
Marker making	1.55	.61	1	49
Organization and interrelationship of the textile, apparel, and retail industries	2.08	.79	2	49
Original fabric design using weaving, knitting, or non-woven techniques	1.37	.64	1	49
Original textile surface design using fabric printing and dyeing techniques	1.39	.57	1	49
Pattern alterations	1.47	.68	1	49
Pattern drafting	1.41	.70	1	49
Pattern grading	1.55	.77	1	49
Social, psychological, and economic forces that affect clothing behavior	1.76	.80	1	49
Tailoring	1.37	.60	1	49
Textile testing	1.61	.64	1	49
Textiles, including the identification, performance, selection, and care of fibers, yarns, fabrics, and finishes	1.76	.72	2	49
The cross-cultural study of clothing and textiles	1.39	.64	1	49
Visual merchandising or display techniques	1.59	.79	1	49

^a The mean is based on a scale of 1-3 (1 = not important; 2 = somewhat important; and 3 = very important). Responses of "Don't Know" and refusals were not calculated into the mean.

^b SD = standard deviation

^c n = the number of subjects who gave a response of 1-3 to this item.

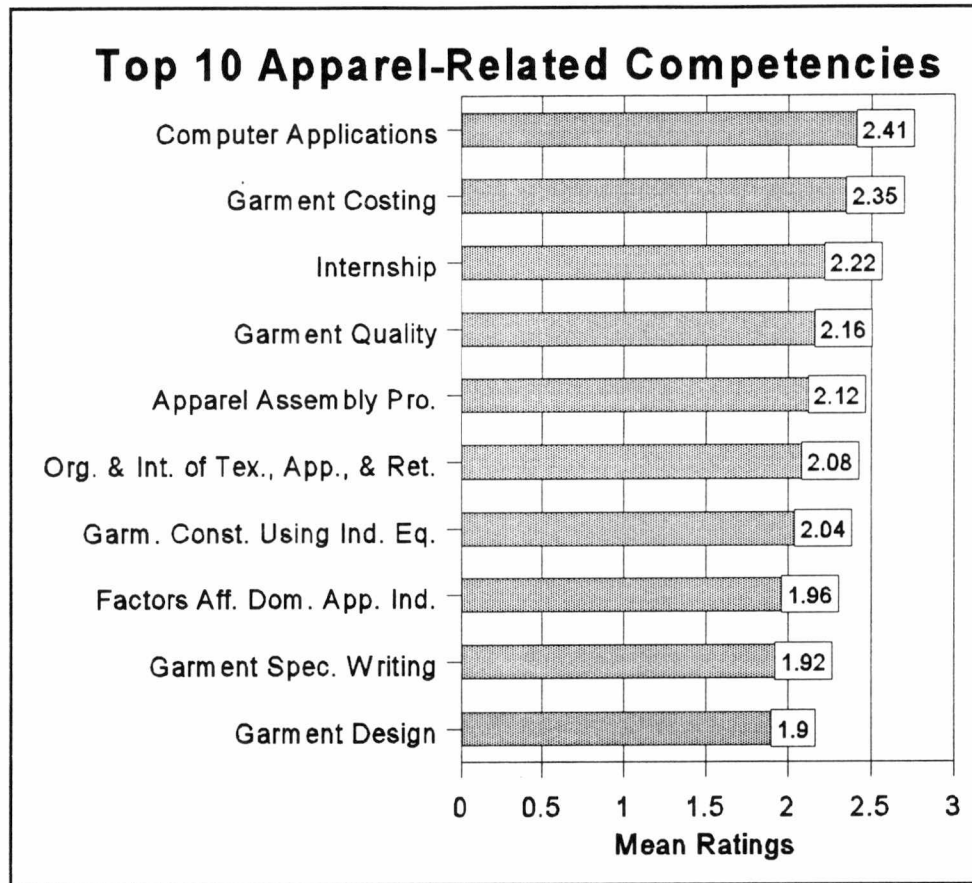


Figure 3 Means of the Top 10 Apparel-Related Competencies Rated on Their Importance for Position 1. Rated on a three-point scale, on which 1 = not important, 2 = somewhat important, and 3 = very important. See Table 14 for the complete names of abbreviated items.

Only seven of the 37 apparel-related competencies had a mean rating above 2. The most frequently-selected rating was 1 (25). The overall mean for apparel-related competencies was 1.66. This category also received the highest number of “don’t know” responses. Fashion theory received 4 “don’t know” responses (see Table A-4). All other apparel-related items received 2 such responses. Among the support and personal competencies, the only item to receive a “don’t know” response was the support competency “understanding other cultures” (3) (see Tables A-5 and A-6).

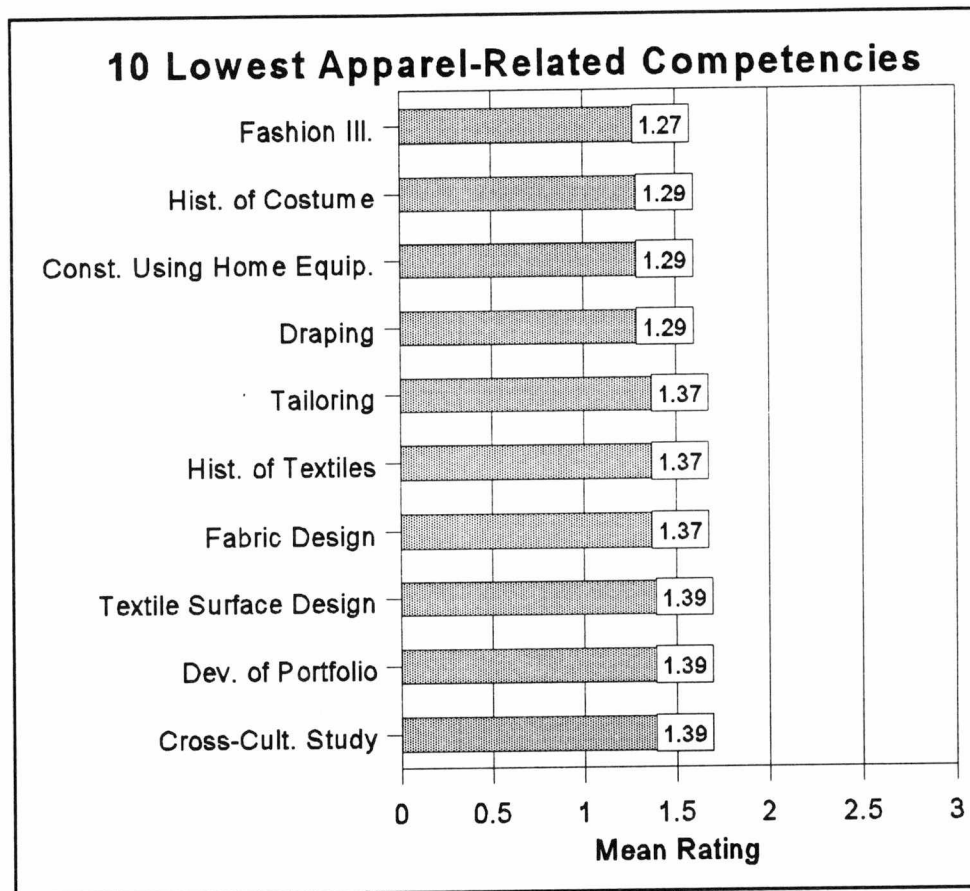


Figure 4 Means of the 10 Lowest-Rated Apparel-Related Competencies Rated on Their Importance for Position 1. Rated on a three-point scale, on which 1 = not important, 2 = somewhat important, and 3 = very important. See Table 14 for the complete names of abbreviated items.

Support Competencies

Among the AAHE institutions reviewed, the suggested support and minor disciplines for fashion design, apparel production, clothing and textiles, and similar programs included marketing, business administration, accounting, management, economics, computer science, chemistry, and art. The 16 support competencies rated in this study were compiled chiefly from courses in those disciplines. Table 15 lists the support competencies along with their with means, standard deviations, modes, and frequencies.

Table 15
Means, Standard Deviations, Modes, & Frequencies for Support Competencies for Position 1
(*n* = 51)

Support Competency/Concept	Mean ^a	SD ^b	Mode	<i>n</i> ^c
Art	1.45	.64	1	51
Business, ethics, and public policy	2.49	.70	3	51
Chemistry	1.47	.73	1	51
Foreign language	1.55	.64	1	51
General management	2.47	.64	3	51
Mathematics or accounting	2.37	.63	2	51
Organization, ownership, and operation of a manufacturing firm	2.25	.74	3	51
Personnel or human resource management	2.12	.82	3	51
Principles of economics	1.94	.70	2	51
Principles of marketing	2.16	.78	3	51
Quality control	2.53	.58	3	51
Retail management	1.76	.79	1	51
Self presentation in business	2.43	.70	3	51
Strategic planning	2.27	.67	2	51
Total quality management	2.31	.76	3	51
Understanding other cultures	2.04	.77	2	48

^a The mean is based on a scale of 1-3 (1 = not important; 2 = somewhat important; and 3 = very important).

Responses of "Don't Know" and refusals were not calculated into the mean.

^b SD = standard deviation

^c *n* = the number of subjects who gave a response of 1-3 to this item.

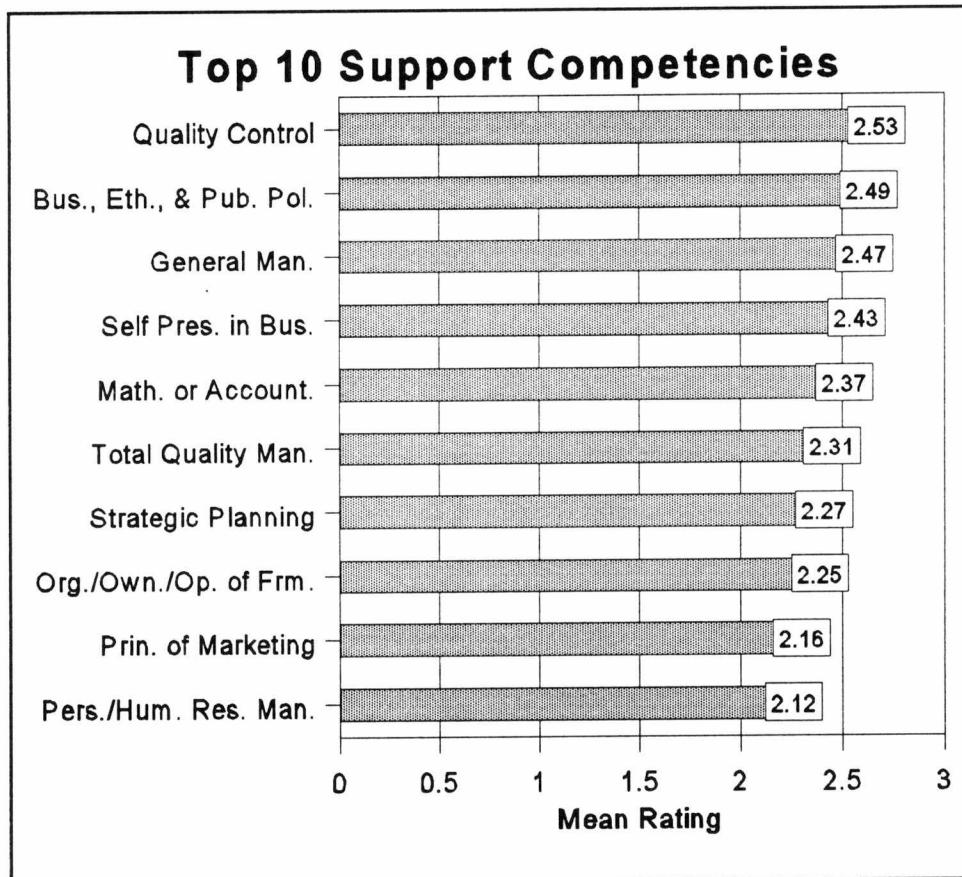


Figure 5 Means of the Top 10 Support Competencies Required for Position 1. Rated on a three-point scale, on which 1 = not important, 2 = somewhat important, and 3 = very important. For these items, $n = 51$. For the complete names of abbreviated items, see Table 15.

Manufacturers gave the highest rating—2.53—to quality control. Total-quality management (TQM), with a rating of 2.31, was also among the top 10 support competencies. Other highly-rated competencies included business, ethics, and public policy (2.49); general management (2.47); self-presentation in business (2.43); and math or accounting (2.37). Figure 5 shows the top 10 support competencies along with their means.

The support competencies with the lowest ratings were art and chemistry (1.47), followed by foreign languages (1.55), and retail management (1.76). The low ratings assigned to foreign

languages and chemistry were consistent with Garner and Buckley's (1988) findings in their study of the competencies needed for fashion marketing careers.

The overall mean for support competencies was 2.10, as compared to 1.66 for apparel-related competencies. Only 5 of the 16 competencies received a rating of less than 2. The modal rating was 3, as compared to the mode of 1 for apparel-related competencies.

Regardless of the growing interest in world trade, more than half of the 51 manufacturers rated foreign languages "not important." Whereas 39% (20) considered languages somewhat important, 8% (4) considered them very important. These ratings may not be, however, a reflection of a low regard for foreign languages. Knowing another language may not have been important for the position in question. Had manufacturers rated the importance of foreign languages independently of any position, the ratings may have been different.

The importance accorded foreign languages may depend upon the company's level or amount of contact with other countries. Hypothesis 6 tests whether companies that had contact with other countries rated languages significantly higher than those that did not.

The 24 manufacturers who rated foreign languages 2 or higher were asked to list the two languages they considered most important (see Table 16). Spanish was mentioned by 67% (14) of the respondents, whereas the remaining languages were mentioned once. Along with French and German, manufacturers mentioned Eastern European, Korean, Cantonese, and "any language" or "no preference."

The most frequently-mentioned second language was English (38%). Other languages mentioned included Chinese (10%) and Japanese (5%). Another 24% (5) of the subjects said, "Any language" or "No preference."

Table 16
Two Most Important Foreign Languages, as Indicated by Manufacturers (*n* = 21)

Language Named ^a	Frequency	
	First Named	Second Named
Cantonese	1 (5%) ^b	1 (5%) ^b
Chinese	0 (0%)	2 (10%)
Eastern European	1 (5%)	1 (5%)
English	0 (0%)	8 (38%)
French	1 (5%)	2 (10%)
German	1 (5%)	0 (0%)
Japanese	0 (0%)	1 (5%)
Korean	1 (5%)	0 (0%)
Spanish	14 (67%)	1 (0%)
Any—no preference	2 (10%)	5 (24%)

^b Percentages do not add up to 100%.

The item “understanding other cultures,” which would also seem important in a global market place, received a mean rating of 2.04. Whereas 39% (20) of the manufacturers considered it somewhat important, 26% (13) did not consider it important. A slightly higher percentage—29% (15)—considered understanding other cultures very important.

Just as with foreign languages, the importance accorded understanding other cultures may depend upon the company’s level of contact with other countries. Hypothesis 6 also tests whether companies that had contact with other countries considered understanding other cultures significantly more important than those that did not.

Personal Competencies

The 16 personal competencies included in the study were gleaned from the literature in several fields, including merchandising, finance, business administration, accountancy, and marketing. Each manufacturer rated these competencies on their importance to the job listed for Position 1. Table 17 lists the means, standard deviations, modes, and frequencies for personal competencies.

Teamwork, with a rating of 2.9, was the top competency, followed by listening and motivation (2.82), and problem solving (2.76). Figure 6 illustrates the top 10 personal competencies.

External written communications received the lowest rating—2.08. This could have resulted from the fact that few of the jobs listed for Position 1 probably require the preparation of annual reports, press releases, and other promotional material. The next lowest ratings went to public speaking to an external audience (2.31) and to salesmanship and stress management (both 2.35). These ratings, however, still placed the competencies in the important to very important range.

Table 17
Means and Standard Deviations of Personal Competencies/Concepts for Position 1 (*n* = 51)

Personal Competency/Concept	Mean^a	SD^b	Mode	<i>n</i>^c
Creative thinking	2.59	.57	3	51
Decision making	2.69	.55	3	51
External written communications, such as preparing annual reports, press releases, and other promotional materials	2.08	.82	3	51
Internal written communications, such as preparing in-house reports and memos	2.67	.52	3	51
Leadership	2.75	.44	3	51
Listening	2.82	.39	3	51
Motivation	2.82	.39	3	51
Negotiating	2.55	.67	3	51
Oral communications on an individual basis or in a group setting	2.71	.54	3	51
Organization	2.73	.45	3	51
Problem solving	2.76	.47	3	51
Public speaking to an external audience	2.31	.76	3	51
Salesmanship	2.35	.69	3	51
Stress management	2.35	.59	2	51
Teamwork	2.90	.30	3	51
Time management	2.75	.48	3	51

^a The mean is based on a scale of 1-3 (1 = not important; 2 = somewhat important; and 3 = very important). Responses of "Don't Know" and refusals were not calculated into the mean.

^b SD = standard deviation

^c *n* = the number of subjects who gave a response of 1-3 to this item.

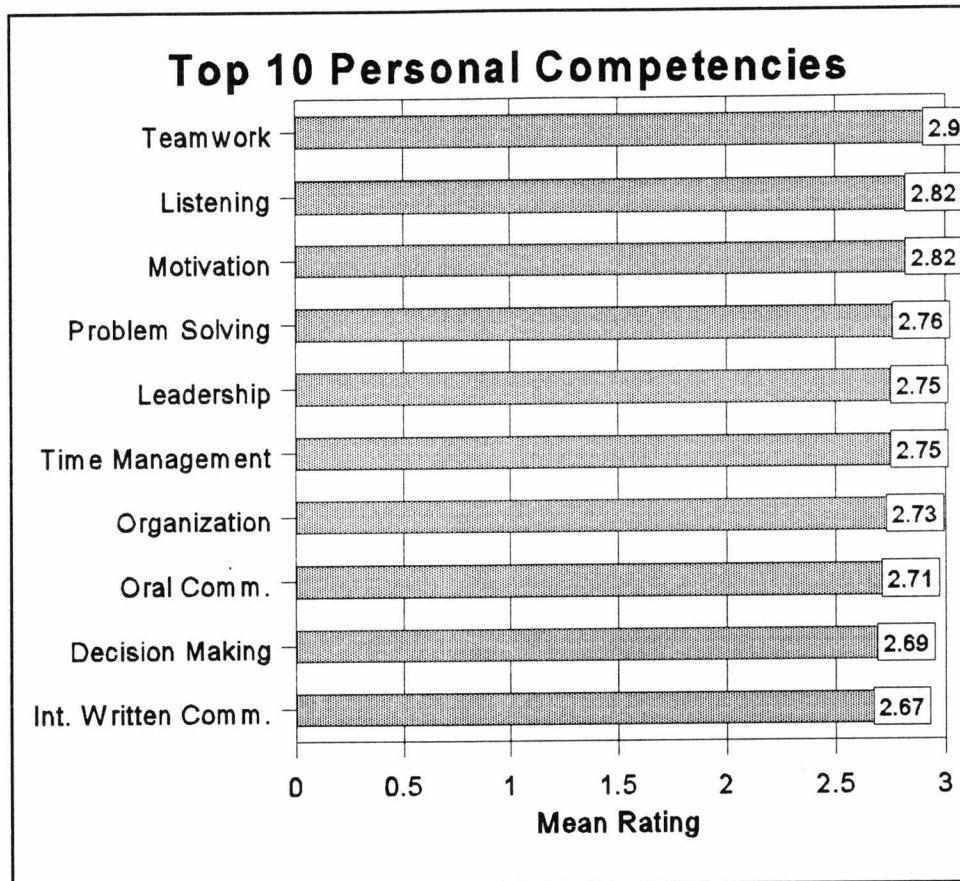


Figure 6 Means of the Top 10 Personal Competencies Required for Position 1. Rated on a three-point scale, on which 1 = not important, 2 = somewhat important, and 3 = very important. For these items, $n = 51$. For the complete names of abbreviated items, see Table 17.

The importance accorded personal competencies is consistent with the findings of the earlier studies cited in this report. The mean rating for all personal competencies was 2.62, as compared to 2.10 for support skills and 1.66 for apparel-related skills. All competencies had a mode of 3, except stress management, which had a mode of 2. There were no “don’t know” responses for personal competencies.

Two hypotheses explore the significance of the differences among ratings given to the three sets of competencies. Hypothesis 7 tests whether manufacturers rated support competencies

significantly higher than apparel-related competencies. Hypothesis 8 deals with the difference between the ratings for personal competencies and all content competencies.

Oral and written communications skills all fell within the important to very-important range (see Table 17). Internal communications, however, had higher mean ratings than external communications. Whereas internal written communications had a mean of 2.67, external written communications had a mean of 2.08. Oral communications on an individual basis or in a group setting had a mean of 2.71, as compared to public speaking, which had a mean of 2.31. The greater importance of internal communications may be related to the nature of the jobs as well as to their necessity for effective teamwork. Related communication skills—listening (2.82) and negotiating (2.55)—also scored highly.

In similar studies of the skills needed for professional success, communications skills scored more highly than other competencies. Hypothesis 9 tests the assumption that communications skills (internal and external written communications, oral communications, and public speaking) received significantly higher scores than other competencies.

Although creative endeavors scored lowest among the apparel-related and support competencies, creative thinking (2.59) and problem solving (2.76) scored in or near the top 10 personal competencies. Creativity would seem, therefore, to be still important, but perhaps in a broader sense—not necessarily related to a specific skill but to one's entire approach to life and to problem solving.

Overall Ratings of Content & Personal Competencies

The top 10 competencies in the study are identical to the top 10 personal competencies, which appear in Figure 6. The ratings for all personal competencies were higher than those of 10 (63%) of the 16 support competencies. Personal competencies received higher ratings than 35 (95%)

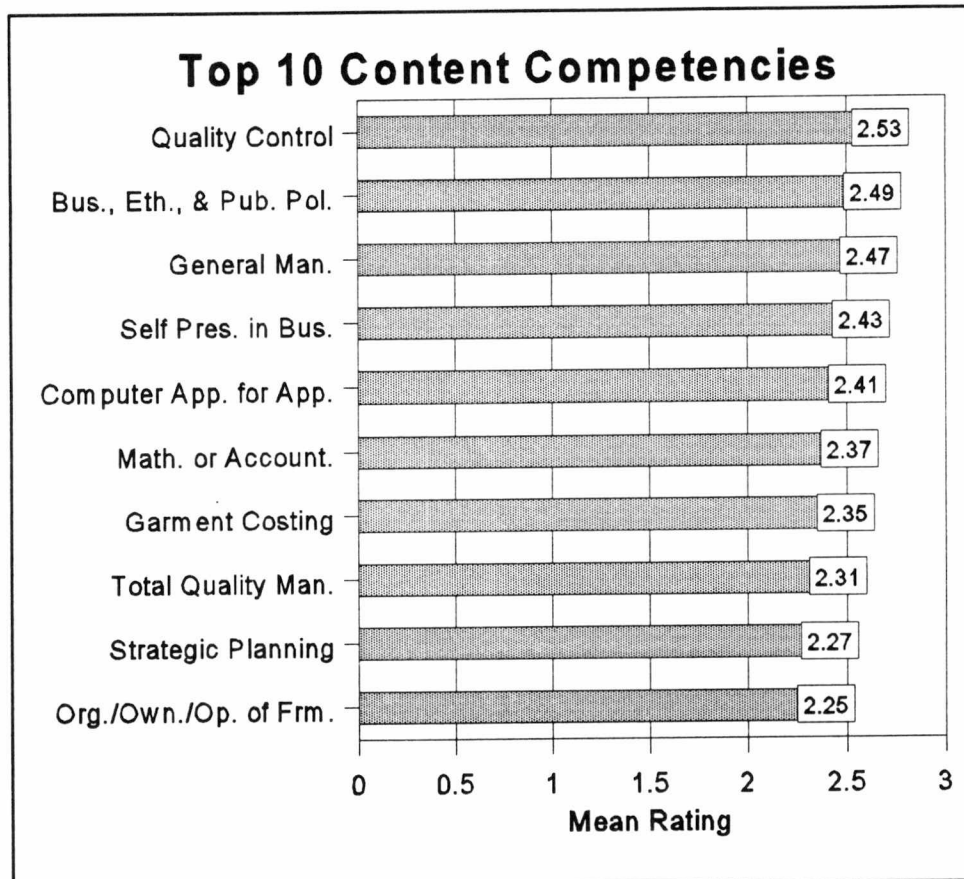


Figure 7 Means of the Top 10 Content Competencies Required for Position 1. Rated on a three-point scale, on which 1 = not important, 2 = somewhat important, and 3 = very important. For the complete names of abbreviated items, see Tables 14 and 15.

of the 37 apparel-related items. The top 10 content competencies contained two apparel-related items—computer applications for the garment industry and garment costing or cost analysis (see Figure 7).

The top 10 content competencies appear in Figure 7. Only two apparel-related competencies—computer applications for the garment industry and garment costing or cost analysis—are included in that list.

The 10 competencies of least importance are identical to the 10 lowest-rated apparel competencies, which appear in Figure 4. The lowest mean for a personal competency (2.08) was higher than the means for 6 (38%) of the 16 support competencies as compared to 31 (84%) of the 37 apparel-related competencies.

The manufacturers who responded to the survey spanned all categories of size, sales volume, and products. Hypothesis 10 tests whether company size, sales volume, and product type had a significant effect on the ratings for content and personal skills.

Tests of Hypotheses

This section contains the statistical analysis for all hypotheses. All related hypotheses are grouped under the same heading. The Statistical Package for the Social Sciences (SPSS) Version 6.2 for Windows was used for the analyses.

Attitudes Toward Two- and Four-Year Institutions

Hypotheses 1, 2, and 3 test the statistical significance of the differences between ratings given to two- and four-year colleges.

Hypothesis 1

Manufacturers will say that community colleges are doing a better job of preparing students to work in the apparel industry than are four-year colleges and universities.

Although the researcher planned to test this hypothesis with a t test, the K-S (Lillifors) scores revealed violations of assumptions of normality. This made it necessary to use a Wilcoxon

matched-pairs signed-ranks test. The responses of the 71 subjects who answered the questions dealing with the preparation of students by both two- and four-year institutions were ranked and analyzed (see Table 18). The test indicated that there was a significant difference ($p < .05$) between the ratings given to two- and four-year programs. The difference was, however, in favor of the four-year colleges. Although the null hypothesis was rejected, Hypothesis 1 was not supported. Manufacturers felt, to a significant degree, that four-year institutions did better job of preparing students to work in the garment industry than did two-year institutions.

Table 18
Wilcoxon Matched-Pairs Signed-Ranks Test to Compare Student Preparation by Two- and Four-Year Institutions ($n = 71$)

Mean Rank	Cases	Z
20.02	32 – Ranks (2-yr. LT 4-yr.)	-4.36*
12.50	5 + Ranks (2-yr. GT 4-yr.)	
	34 Ties (2-yr. EQ 4-yr.)	
	71 Total	

* $p < .05$

Hypothesis 2

Manufacturers will say that faculty in community colleges are more familiar with and attuned to industry's need than are faculty in four-year colleges and universities.

Although a t test was planned for this analysis, violations of assumptions of normality necessitated the use of the Wilcoxon matched-pairs signed-ranks test (see Table 19). The test

indicated that there was not a significant difference between the responses of manufacturers.

Therefore, the null hypothesis was not rejected. Hypothesis 2 was not supported, indicating that manufacturers did not feel that faculty in two-year colleges were more aware of and attuned to industry's needs than were faculty in four-year colleges. An examination of the mean ranks indicates that a larger percentage of manufacturers felt that faculty in four-year institutions were more attuned to industry's needs.

Table 19

Wilcoxon Matched-Pairs Signed-Ranks Test to Compare the Awareness of Faculty in Two- and Four-Year Institutions to Industry's Needs ($n = 70$)

Mean Rank	Cases	Z
14.95	19 – Ranks (2-yr. LT 4-yr.)	-1.84 <i>ns</i>
13.56	9 + Ranks (2-yr. GT 4-yr.)	
	42 Ties (2-yr. EQ 4-yr.)	
	70 Total	

Hypothesis 3

Manufacturers will say that faculty in community colleges are more valuable as resource persons for industry than are faculty in four-year colleges and universities.

Whereas a t test was also planned to test this hypothesis, violations of assumptions of normality made it necessary to use the Wilcoxon matched-pairs signed-ranks test (see Table 20). Because the results showed a significant difference ($p < .05$), the null hypothesis was rejected. The difference was, however, in favor of the four-year faculty. Hypothesis 3, therefore, was not

supported. One might conclude that manufacturers felt that faculty in four-year colleges were more valuable as resource persons for industry than were faculty in two-year colleges.

Table 20
Wilcoxon Matched-Pairs Signed-Ranks Test to Compare Student Preparation by Two- and Four-Year Institutions ($n = 78$)

Mean Rank	Cases	Z
11.55	19 – Ranks (2-yr. LT 4-yr.)	-3.02*
11.17	3 + Ranks (2-yr. GT 4-yr.)	
	56 Ties (2-yr. EQ 4-yr.)	
	78 Total	

* $p < .05$

Future Hiring Plans

Hypotheses 4 and 5 address the future hiring plans of manufacturers with regard to the degrees and educational levels preferred.

Hypothesis 4

For future professional positions, manufacturers will prefer to hire graduates from disciplines other than those related to apparel and home economics (apparel production, fashion design, home economics, merchandising, retailing, and textiles).

In order to test this hypothesis, the companies were divided into three groups: (1) those who chose only majors related to apparel or home economics, (2) those who chose only other majors, and (3) those who chose both. This procedure was used for each position. The chi square goodness-of-fit

test was used to determine whether there was a significant difference between the observed number and expected number of responses for Positions 1 and 2 (see Tables 21 and 22).

Table 21
Chi Square Analysis of Majors Preferred for Position 1

Major	N %	Expected	χ^2	df
Apparel/home economics degrees only	4 (8)	16.67	22.12*	2
Other degrees only	31 (62)	16.67		
Both kinds of degrees	15 (30)	16.67		

* $p < .05$

For Positions 1 and 2, the null hypotheses were rejected and Hypothesis 4 was supported, as the differences were significant ($p < .05$). The results of the chi square analyses and inspection of the frequency distributions indicate that manufacturers prefer to hire graduates with majors other than those related to apparel and home economics. Other majors, therefore, appear to pose a threat to those related to apparel and home economics and should be addressed in the threat/opportunity audit that is part of the environmental analysis of the strategic planning process.

Hypothesis 5

For future professional positions, manufacturers will consider hiring persons with less than a bachelor's degree.

Table 22
Chi Square Analysis of Majors Preferred for Position 2

Major	N %	Expected	χ^2	df
Apparel/home economics degrees only	1 (14)	12	7.17*	2
Other degrees only	18 (50)	12		
Both kinds of degrees	13 (36)	12		

* $p < .05$

The chi square goodness-of-fit test was used to test Hypothesis 5 for Positions 1 and 2 (see Tables 23 and 24). The hypothesis was supported for Position 1, as the difference was significant ($p < .05$). For Position 2, however, Hypothesis 5 was not supported because the null hypothesis was not rejected. As a result of these tests, one might conclude that persons without bachelor's degrees pose some threat to college graduates who seek employment in the apparel industry.

Table 23
Chi Square Analysis of Manufacturers' Willingness to Hire Persons With Less Than a Bachelor's Degree for Position 1

Response	N %	Expected	χ^2	df
Yes	32 (63)	25.00	3.92*	1
No	18 (35)	25.00		

* $p < .05$

Table 24**Chi Square Analysis of Manufacturers' Willingness to Hire Persons With Less Than a Bachelor's Degree for Position 2**

Response	N %	Expected	χ^2	df
Yes	24 (65)	18.50	3.27 <i>ns</i>	1
No	13 (35)	18.50		

Importance of Foreign Languages & Understanding Other Cultures

Hypotheses 6 tests the importance of foreign languages and understanding other cultures to manufacturers with and without foreign contacts.

Hypothesis 6

Manufacturers who have branches, plants, or clients in other countries or that do business with other countries will give higher ratings to (a) foreign language competencies and (b) understanding other cultures than those without international contacts.

Although a *t* test was originally planned to test this hypothesis, assumptions of normality were violated. The Mann-Whitney U test was, therefore, used instead. The manufacturers were divided into two test groups: (1) companies that did business with or had clients in other countries and (2) companies without international contacts. Because the difference between groups was not significant, the null hypothesis was not rejected. As a result, Hypothesis 6 a was not supported (see Table 25). The same was true of Hypothesis 6 b (see Table 26). One might conclude that doing

business with or having branches in other countries did not influence the importance accorded foreign languages or to understanding other cultures to a significant degree.

Table 25
Mann-Whitney U Test to Compare Ratings for the Importance of Foreign Languages for Position 1 ($n = 46$)

Mean Rank	Cases	U	W	Z
23.73	39 BRANCH = yes	127.5 <i>ns</i>	155.5	-.31
22.21	7 BRANCH = no			
	46 Total			

Table 26
Mann-Whitney U Test to Compare Ratings for the Importance of Understanding Other Cultures for Position 1 ($n = 46$)

Mean Rank	Cases	U	W	Z
23.77	39 BRANCH = yes	126.0 <i>ns</i>	154.0	-.34
22.00	7 BRANCH = no			
	46 Total			

Ratings for Content & Personal Competencies

Hypotheses 7 and 8 test the significance of the differences between ratings given to apparel, support, and personal competencies. Hypothesis 9 tests whether manufacturers rated competencies concerned with oral and written communications significantly higher than other personal competencies.

Hypothesis 7

Manufacturers will rate support competencies more highly than apparel-related competencies.

Hypothesis 8

Manufacturers will rate personal competencies more highly than content (apparel-related and support) competencies.

A repeated measures analysis of variance was used to determine whether there was a significant difference among the mean ratings for apparel-related, support, and personal competencies. Because there was a violation of the assumption of sphericity, adjustments were necessary. The Greenhouse-Geisser, Huynh-Feldt, and lower-bound epsilons were used to adjust the degrees of freedom (*df*) for the averaged results (see Table 27). These tests indicated that the mean of at least one of the competency groups differed significantly from the other two. The Newman-Keuls post hoc test was then used to determine which of the differences between means were significant and which were not (see Table 28). The results indicated that the means of all three groups differed significantly ($p < .05$) from each other.

Thus, the null hypotheses were rejected for Hypotheses 7 and 8, and both hypotheses were supported. The test results and an examination of the means in Table 28 indicates that manufacturers rated support competencies significantly higher than apparel-related competencies. They also rated personal competencies significantly higher than both apparel-related and support competencies.

Table 27
Repeated Measures Analysis of Variance for Apparel-Related, Support, & Personal Competencies

Source of Variation	Sum of Squares	df	Mean Squares	F
WITHIN+RESIDUAL	7.69	98.00	.08	
(Greenhouse-Geisser)		70.53		
(Huynh-Feldt)		72.09		
(Lower bound)		49.00		
SKILL	23.26	2.00	11.63	148.15*
(Greenhouse-Geisser)		1.44		148.15*
(Huynh-Feldt)		1.47		148.15*
(Lower bound)		1.00		148.15*

* $p < .05$

Table 28
Newman-Keuls Post Hoc Test of the Means of Apparel-Related, Support, & Personal Competencies

Means	A Apparel 1.66	B Support 2.10	C Personal 2.62	W_r
A-1.66		.4437*	.9637*	.133
B-2.10			.5198*	.113
C-2.62				

* $p < .05$

Hypothesis 9

Manufacturers will rate communication competencies (internal written communications, external written communications, oral communications, and public speaking) more highly than other competencies.

Although *t* tests were originally planned for this analysis, violations of assumptions of normality made it necessary to use the Wilcoxon matched-pairs signed ranks test. In one test, the mean rank for the four communications competencies was compared to the mean rank for content competencies (see Table 29). In the other test, the mean rank for the four communications competencies was compared to the mean rank for all other personal competencies (see Table 30).

Table 29
Wilcoxon Matched-Pairs Signed-Ranks Test to Compare Ratings of Communications Competencies to Those of Content Competencies (*n* =51)

Mean Rank	Cases	Z
28.56	44 – Ranks (Content LT Commun.)	-5.56*
9.93	7 + Ranks (Content GT Commun.)	
	0 Ties (Content EQ Commun.)	
	51 Total	

**p* < .05

The Wilcoxon test comparing communications skills to content skills indicated that there was a significant difference between the two groups (*p* < .05). Therefore, the null hypothesis was rejected. An examination of the means indicated that manufacturers rated communications skills significantly higher than content skills.

The Wilcoxon test comparing communications skills to all other personal skills also showed a significant difference ($p < .05$). The null hypothesis was rejected in this case, as well. An examination of the mean ranks, however, indicated that manufacturers rated communications skills lower than the group of other personal skills. Hypothesis 9 was, therefore, partially supported.

Table 30
Wilcoxon Matched-Pairs Signed-Ranks Test to Compare Ratings of Communications Competencies to Those of Other Personal Competencies ($n = 51$)

Mean Rank	Cases	Z
12.41	11 – Ranks (Personal LT Commun.)	-4.30*
26.43	34 + Ranks (Personal GT Commun.)	
	6 Ties (Personal EQ Commun.)	
	51 Total	

* $p < .05$

Hypothesis 10 tests whether demographics affect the ratings given to content and personal skills. These factors could be important when designing programs to meet the needs of companies with different characteristics.

Hypothesis 10

The ratings given to content and personal competencies will not differ with (a) company size, as indicated by number of employees; (b) sales volume; and (c) product type or SIC category.

One-way analyses of variance (ANOVA) were used to test Hypothesis 10. All five categories for the number of employees (under 50, 50 to 99, 100 to 249, 250 to 499, and 500 or more) were represented in the total sample of 91 manufacturers. Among the 51 respondents who rated the competencies, however, only one manufacturer fell into each of the first two groups. This made it necessary to base the analysis upon the remaining three groups, considering only companies with 100 or more employees. Separate ANOVAS were used to analyze manufacturers' ratings for content and personal skills (see Tables 31 and 32). In both cases, the null hypotheses were not rejected, as there were no significant differences among the ratings given by any of the employee groups. One might conclude, therefore, that company size, as indicated by number of employees, did not make a difference in the ratings that manufacturers gave to content and personal skills.

Table 31
Analysis of Variance Summary Table for Comparing Ratings of Content Competencies
According to Number of Employees

Source of Variation	<i>df</i>	Sum of Squares	Mean Squares	<i>F</i>
Between Groups	2	.0676	.0338	.3707 <i>ns</i>
Within groups	46	4.1948	.0912	
Total	48	4.2624		

Note. Ratings for apparel-related and support competencies/concepts were combined and averaged for this test.

For sales volume, all three categories (under \$35 million, \$35-\$99 million, and \$100 million +) were represented among subjects who rated the competencies. Separate ANOVAS were used to analyze manufacturers' ratings for content and personal skills (see Tables 33 and 34). In both cases, the null hypotheses were not rejected, as there were no significant differences among the ratings

given by any of the groups. One might conclude, therefore, that sales volume did not make a difference in the ratings given to content and personal skills.

Table 32
Analysis of Variance Summary Table for Comparing Ratings of Personal Competencies
According to Number of Employees

Source of Variation	<i>df</i>	Sum of Squares	Mean Squares	<i>F</i>
Between Groups	2	.1198	.0599	.5051 <i>ns</i>
Within groups	46	5.4565	.1186	
Total	48	5.5764		

Table 33
Analysis of Variance Summary Table for Comparing Ratings of Content Competencies
According to Sales Volume

Source of Variation	<i>df</i>	Sum of Squares	Mean Squares	<i>F</i>
Between Groups	2	.0749	.0374	.4542 <i>ns</i>
Within groups	38	3.1319	.0824	
Total	40	3.2068		

Note. Ratings for apparel-related and support competencies/concepts were combined and averaged for this test.

Table 34

Analysis of Variance Summary Table for Comparing Ratings for Personal Competencies According to Sales Volume

Source of Variation	<i>df</i>	Sum of Squares	Mean Squares	<i>F</i>
Between Groups	2	.4636	.2318	2.1124 <i>ns</i>
Within groups	38	4.1696	.1097	
Total	40	4.6332		

In order to determine whether product type or SIC code made a significant difference in the ratings for content and personal competencies, the manufacturers were divided into product groups. Groups assignments were based upon the products manufactured, as indicated by SIC codes. Each manufacturer was assigned to one group only. The groups were (1) men's and boys'; (2) men's and boy's and women's, misses', and juniors'; (3) women's, misses', and juniors'; (4) girls', children's, and infants'; (5) men's and boy's; women's, misses', and juniors'; and girls', children's, and infants'; (6) hats and other; (7) women's, misses', and juniors'; and girls', children's, and infants'; (8) knits; (9) other; and (10) men's and boy's and girls', children's, and infants'. Because of their larger size, only groups 1 through 5 were included in the analysis. See Table 4 for a listing of the SIC codes included in each group.

Because of violations of assumptions of normality, Kruskal-Wallis one-way ANOVAS were used to determine whether ratings given to content and personal skills varied significantly by SIC code or product type (see Tables 35 and 36). The results of both tests indicated that there was not a significant difference, so the null hypothesis was not rejected.

Table 35

Kruskal-Wallis One-Way Analysis of Variance for Comparing Ratings of Content Competencies According to SIC Code or Product Type ($n = 43$)

Mean Rank	Cases	χ^2	df
21.07	15 SIC Group 1	5.31 <i>ns</i>	4
16.29	12 SIC Group 2		
27.36	7 SIC Group 3		
26.00	4 SIC Group 4		
27.80	5 SIC Group 5		
	43 Total		

Table 36

Kruskal-Wallis One-Way Analysis of Variance for Comparing Ratings of Personal Competencies According to SIC Code or Product Type ($n = 43$)

Mean Rank	Cases	χ^2	df
19.40	15 SIC Group 1	2.54 <i>ns</i>	4
21.58	12 SIC Group 2		
27.43	7 SIC Group 3		
26.13	4 SIC Group 4		
19.90	5 SIC Group 5		
	43 Total		

On the basis of all tests, Hypothesis 10 was supported. One might conclude, therefore, that company size, sales volume, and SIC code or product type did not significantly affect manufacturers' ratings for content and personal skills. However, the lack of significant differences could be related

to the small sizes of all groups. If the study is replicated, a larger sample is suggested. In addition, it would be advantageous to stratify the sample to include adequate representation from all size, sales volume, and product groups.

CHAPTER V

DISCUSSION & CONCLUSIONS

This chapter discusses of the market environment for apparel-production programs, as reflected by the apparel manufacturers who participated in this study. It also examines the competitive environment and addresses the threats to and opportunities for such programs. Finally, it offers suggestions for program re-organization and development that may help to move the curriculum in the right direction.

Understanding the Market Environment

In many ways, the characteristics and views of the manufacturers who participated in this study were consistent with those that emerged from the review of literature. Global expansion is among today's most dominant business trends. In order to communicate with and understand their foreign counterparts, many disciplines, such as accountancy, finance, and management, stress the importance of foreign languages, multi-cultural awareness, and international experience. Employers also urge educators to emphasize these elements in the curriculum (Ruhland, 1993; Samson, 1993; Shengliang & Boatler, 1993; Smith, 1993).

Most of the manufacturers who participated in this study were actively involved in international trade. More than one third had branches or plants in other countries, and more than 75% did business with firms or clients in other countries. An interest in other cultures, however, was not evident. Of the 51 manufacturers who planned to hire at least one college graduate, more than half considered a knowledge of foreign languages unimportant. Fewer than 10% of the subjects rated

foreign language skills “very important.” These responses, however, could have reflected the nature of the of the jobs in question. Subjects were not asked about the general importance of foreign languages but about their importance for the next position to be filled. If the job were purely domestic, knowledge of a foreign language might not be necessary.

Manufacturers did not seem to consider foreign language skills important even for employees who had direct contact with other countries. Among companies that assigned U.S. citizens to work in other countries, only 42% gave preference to employees with foreign language skills. For assignments in other countries, only 25% of the companies that did business with firms or clients in other countries gave preference to employees with foreign language skills.

Manufacturers exhibited similar views on understanding other cultures. Whereas 29% of the respondents considered it very important to understand other cultures, more than one fourth did not consider it important. Three respondents indicated that they did not know whether understanding other cultures was important.

In addition, manufacturers did not consider a knowledge of foreign languages or of other cultures important curricular elements. The cross-cultural study of dress was among the 10 lowest-rated competencies in the study. Understanding other cultures and foreign languages ranked eleventh and thirteenth, respectively, among the 16 support competencies.

The lack of concern for understanding and communicating with other cultures is consistent with the findings in other studies related to clothing and textiles. In Garner and Buckley’s (1988) study of fashion-marketing curricula, foreign languages were among the items slated for de-emphasis or removal from the program. Fair et al. (1990), however, admonish educators not to ignore the importance of languages and similar skills because of their obvious significance in the future, which may not yet be apparent to some firms.

The tendency to employ few professionals was also evident among these manufacturers. Only 41% planned to hire two or more college graduates in the foreseeable future. Their reasons included a lack of openings, lack of sufficient volume, small company size or family ownership, and a preference for experienced personnel. Many manufacturers also indicated that their businesses did not require college graduates, that they preferred to promote from within, and that they could provide the necessary training.

The practice of employing persons without bachelor's degrees is apparent in other fields related to clothing and textiles as well. Among the retailing executives who participated in Tuntland's (1987) study, fewer than half held bachelor's degrees. Fewer than one third of the sportswear buyers who participated in the Rogers and Lutz (1990) study held bachelor's degrees. One is reminded that retailing is another field that traditionally trains and promotes from within.

Although the garment industry may not need trades people with college degrees, it is looking for leaders. The competencies that received the highest ratings included teamwork, motivation, problem solving, leadership, organization, critical thinking, and strategic planning. Other important themes involved an understanding of business, ethics, public policy, and management and of the interrelationship among various aspects of the business environment. The lowest ratings went to competencies and skills specific only to apparel.

The desire for employees with broad-based knowledge is a theme that appears throughout the literature, especially in studies related to business-administration, finance, and marketing (Aiken et al., 1994; Ray et al., 1994). General skills and competencies that are applicable to a spectrum of businesses received higher ratings than industry-specific skills. Today's employers want people who can think creatively, plan, and implement strategies that can move the company forward as the marketplace evolves.

Another important theme is cooperation. The ability to work with others is paramount in all business environments today. In the current study, manufacturers gave the highest ratings to competencies that revolved around that theme: teamwork, listening, leadership, and oral and written communications.

Most of the 88 jobs for which manufacturers planned to recruit college graduates involved management. Numerous other positions required sophisticated technical or engineering skills. All positions required the ability to get along with business associates and customers.

Whereas the scientific competencies—quality control, computer applications, mathematics, and garment costing—received relatively high ratings, all artistic competencies received low scores. Art and fashion illustration, respectively, were the lowest-ranking items among the support and apparel-related competencies. Draping, fabric design, textile design, and portfolio development were other low-ranking competencies. Creative thinking, however, ranked higher than all of the scientific competencies.

In the current study, the most popular majors were business administration, marketing, computer science, apparel production, and engineering. Most majors related to home economics—fashion design, retailing, textiles, merchandising, and home economics (clothing and textiles)—were in less demand. The most viable apparel/home-economics major was apparel production, which is also an engineering specialty. Among the jobs for which manufacturers would consider an apparel production major, “engineer” was mentioned four times. Hence, some manufacturers may have favored apparel production because of its possible connection with engineering. Home economics (clothing and textiles) was among the three least popular majors, having been considered for only one of the 88 jobs mentioned in the study.

The lack of interest in majors related to home economics (clothing and textiles) is not surprising when one considers the ratings for apparel-related competencies. Only 7 (19%) of the 37

competencies had a mean of 2 (somewhat important) or better. This would indicate that the curriculum is based upon competencies that manufacturers do not consider important.

Competencies that came from support courses had much higher means, 69% (11) of which were above 2. Hence, it is understandable that the majors from which the support competencies were culled—including business administration, accountancy, marketing, and engineering—were in greater demand by manufacturers.

As predicted, a significant number of manufacturers were willing to hire persons without bachelor's degrees for professional positions. This could reflect the industry's long-standing reliance upon non-professional employees or their disdain for paying the higher salary that college graduates require.

Dissatisfaction with educational institutions was evident in manufacturers' ratings of college preparation, of faculty familiarity with the garment industry, and of the value of faculty as resource persons for industry. The mean ratings for all but one item were below 2, indicating that manufacturers considered neither the faculty nor the course work to be of value. The item that scored above 2 was the level of industry preparation provided by four-year colleges.

In regard to the market environment, the findings indicate several trends that have broad implications for both the industry and education. The lack of interest in foreign languages and in understanding other cultures could hamper future business enterprises and offshore expansion. Although one might argue that a knowledge of English is commonplace in the international business community, making the effort to communicate with people in their own language builds trust. It could also be useful in exploring and implementing new business opportunities abroad. As Americans come into contact with persons other than executives, such as local artisans and employees in offshore plants, language skills may become essential.

Manufacturers exhibited a similar stance on understanding other cultures. If a company expects to increase its global contacts, it would seem prudent to learn as much as possible about other societies. Their inhabitants might be considered for their potential as business associates as well as consumers. According to the marketing concept, understanding the needs of potential customers is vital. In addition, knowledge of the culture and its work ethic are useful in developing and maintaining a productive, harmonious work environment in offshore branches.

One wonders how successful American apparel manufacturers will eventually be in their offshore ventures if they place so little emphasis on understanding and communicating with their foreign counterparts. Due to the growing diversity of the American work force, multi-cultural awareness and foreign language skills are becoming increasingly important even in the continental United States.

Although manufacturers gave low ratings to artistic competencies and higher ratings to scientific ones, they seem to value creativity in a broader sense. Finding creative ways to adapt to change and to expand the business is essential in today's fast-paced garment industry. Being creative may also mean taking advantage of electronic equipment to illustrate and produce a line of garments or fabrics instead of using a sketch pad. Even those who have little or no artistic training can use the computer to produce a creditable product, especially at a time when knock-offs are so prevalent. Eventually, there may be only a few highly creative designers whose work will be copied and modified for the masses. Among the 88 jobs mentioned in this study, there were four positions for designers. The de-emphasis of the creative aspects of apparel production may also signal our movement toward the gray, homogenous world of the science fiction novel.

Many of the artistic competencies, such as fashion illustration, fabric design, and textile design, were labor-intensive. For manufacturers who must produce several garment lines per year, performing these tasks manually is impractical. Much of the work can be done faster by computer,

where designers can experiment with variations and produce a line in record time. Several other competencies that received low scores, such as tailoring, draping, and couture sewing techniques, were also labor-intensive.

Although manufacturers said that they would consider hiring persons with majors that are traditionally part of home economics, which include apparel production, fashion design, merchandising, retailing, and textiles, they were willing to consider a major in home economics for only one position. This indicates that the term “home economics” may carry a stigma. The same was not true of business administration. Manufacturers considered it for a higher percentage of jobs than its component majors—accountancy, finance, and marketing.

The tendency to select the components of home economics but not home economics itself indicates that manufacturers do not know what the discipline involves. They may harbor stereotypes of biscuit baking and apron making, not realizing that home economics now provides career preparation. A public relations effort that educates the business community about the evolution of home economics and about its related careers might help manufacturers to view the discipline in a more positive light.

Many educators are disturbed by the dearth of college graduates within the apparel industry and by the willingness of manufacturers to consider persons without bachelor’s degrees for professional positions. This practice, however, may simply be “business as usual” for a trade. Following the tradition of most trades, the skills of dressmaking and tailoring have passed from one person to another through apprenticeships and hands-on training. Charles Frederick Worth developed his renowned skills in couture while apprenticing in fabric shops. The Callot Soeurs learned design and lace making from their parents. Pierre Cardin became a tailor’s apprentice at age 14 and worked for several couturiers before opening his own salon (Milbank, 1985). It is only natural that manufacturers continue to train their employees as they have always done.

The fact that clothing and textiles' professors have targeted the garment industry as a market for their graduates does not mean that the industry needs them. Many of the skills currently taught in home economics (clothing and textiles) programs, such as tailoring, pattern making, grading, marker making, and sewing, can be mastered without a college education. In addition, the low ratings that manufacturers gave to college programs and to faculty indicate that the training is inadequate for industry's needs.

The tendency of manufacturers to hire few college graduates also denotes a need for only a few creative leaders and technical experts who can chart the company's course, streamline its operations, and safeguard product quality. Their strategies and designs can be implemented and produced as they have always been—by tradespeople.

If manufacturers are to hire more college graduates and to value formal education, they must have a reason to do so. Colleges must produce graduates with a level of skill, sophistication, and understanding that cannot be obtained elsewhere. If apparel production curricula that are related to home economics (clothing and textiles) programs are to survive, drastic changes are apparently necessary.

Understanding the Competitive Environment

The current study substantiated several forms of competition that beset the graduates of home-economics-based apparel production programs. First, graduates from all majors must compete with persons who are already ensconced in the company. As suggested by the literature, apparel manufacturers tend to train existing employees and to promote from within. The manufacturers who participated in this study espoused the same practice. Their preference for promoting and training current employees was the most frequently-cited reasons for not hiring more college graduates.

Persons without bachelor's degrees impose further competition on college graduates. The second most popular reason for not hiring more college graduates was the ability to find persons without degrees who had the needed qualifications. As it does for retailing and merchandising positions, this competition comes from persons with associate's degrees, high-school diplomas, and on-the-job training. In addition, manufacturers did not feel that college graduates had the necessary skills and qualifications. Many manufacturers also preferred to hire persons with industry experience, especially for the upper-level positions that college graduates seek.

A third wave of competition comes from graduates of other disciplines. The majors that manufacturers favored most included business administration, marketing, computer science, and engineering. These majors have the commonality of being broad-based and applicable to most business ventures. Most apparel production programs, however, are considerably narrower in scope and focus on only a few positions and products. Although apparel-related skills may be somewhat valuable, they do not appear to be marketable without support competencies and strong personal skills.

It is apparent that apparel manufacturers most value industry experience and general business-administration, marketing, and technical expertise that can be applied to any situation. They also value personal skills above content skills. Little priority is accorded skills specific to apparel. Inasmuch as apparel production curricula specialize in apparel-related skills, the need to modify the curriculum is apparent.

On the basis of the findings, there are also several opportunities for apparel production programs. Apparel-specific skills, especially in CAD, could be helpful to students in industrial engineering, marketing, and other disciplines from which manufacturers recruit graduates. Apparel programs that are in danger of extinction might explore linkages with disciplines from which

manufacturers recruit graduates. These disciplines might also be good partners for interdisciplinary projects and grants.

Whereas merchandising programs tend to concentrate on retailing positions, the manufacturing sector might provide a new market for merchandising graduates. Faculty might explore the aspects of merchandising that are most important to manufacturers and incorporate them into the curriculum.

Although manufacturers tend to favor technical expertise, they may sometimes require creative leadership in developing a product line. This would create a niche for freelance designers who work as consultants for a number of firms. Apparel production programs that have a strong emphasis in fashion design may want to explore this market. Faculty might also explore entrepreneurial endeavors in marketing, merchandising, and other areas.

Positioning Apparel production Programs for the Future

The findings of this study illuminate several issues concerning apparel productions programs that educators must address. The following discussion considers those issues and provides suggestions for program evaluation and for improving program viability.

The apparel production curricula that arose from programs in clothing and textiles and home economics were a creative solution to the application of traditional, home-based skills to the professional work force. Their main selling point was the emphasis on apparel. Unfortunately, the curriculum's narrow focus is its greatest weakness. The majors most preferred by manufacturers, such as business administration, marketing, and industrial engineering, all shared a broad focus. Hiring faculty from those disciplines would increase the depth and breadth of apparel production programs and provide expertise that existing faculty lack. Other linkages with preferred disciplines might also be possible.

Existing apparel production programs tend to emphasize technical rather than professional skills. Most of the courses stress manual skills, such as draping, tailoring, pattern making, sewing, drafting, grading, and marker making. A college education is not necessary to develop proficiency in these skills. Even with computer use, the emphasis is often on technical skills. Disciplines that compete with apparel production focus on strategic planning, problem solving, decision making, public policy, the business environment, forecasting, and management. They stress the development of the system rather than its usage.

The lack of up-to-date technical expertise among faculty is another weakness in apparel production programs. Lind's (1989) study emphasized the need for faculty training in order to make clothing and textiles programs more viable. Rather than leading the industry, most faculty require training from the industry in order to teach courses. Why should manufacturers pay graduates higher salaries for second-hand training that faculty members got from industry? It would be more efficient to train employees directly, which is exactly what manufacturers do. The industry needs employees who can bring a new perspective to the business and who have skills and experience that the company does not provide.

Perhaps the greatest problem in programs related to clothing and textiles is lack of input from the consumers of higher education—both students and employers. When developing curricula, faculty tend to sidestep manufacturers and to consult only each other. As indicated in the review of literature, most curricular studies in clothing and textiles solicit the opinions of faculty rather than of consumers. Inasmuch as the industry does not value these programs enough to favor their graduates, more consumer input is necessary.

Suggestions for Improving Program Viability

- **Be more responsive to the consumers of higher education.** Instead of researching the opinions of faculty members, seek input from employers and graduates. Manufacturers can identify their own needs better than anyone. Their council should be sought through individual consultation or on advisory committees. Graduates are in the best position to evaluate the saliency of programs in the current job market. They know which aspects of the program helped and hindered their employability and where more emphasis is needed.
- **Provide up-to-date training for faculty and release time to retool.** Numerous studies have indicated the need for faculty training, especially on subjects that they have never studied. This is the case with many apparel-related competencies, such as CAD, costing, quality control, grading, specification writing, and marker making. Training must be state-of-the-art and provide future insight rather than be tantamount to what the industry provides its employees. Once trained, faculty also need release time to internalize and explore their new-found knowledge. They also need time to refurbish courses and to integrate the information. In order to be more salient, most courses and curricula require complete redesign.
- **Redesign programs to include more technical expertise, support skills, and personal skills.** If apparel production programs are to be maintained, they need more emphasis on higher-level technical skills, such as computer applications, costing, and quality control, rather than on traditional sewing and design skills. Skills that can be acquired without a degree should be de-emphasized. The support and personal skills required to organize and maintain a business are also essential. These can be worked into every course in the

curriculum. The Laughlin and Kean (1995) study of existing clothing and textiles curricula indicates that educators have already begun to incorporate broader, personal skills.

- **Explore opportunities for internships with apparel manufacturers.** One of the best means of providing students with experience is through internships, to which manufacturers gave high ratings. These often result in permanent employment. If the program really is viable, internships are excellent public-relations tools.
- **Explore new markets for graduates.** Whereas large companies are downsizing, small businesses are proliferating. Apparel production curricula could include training in implementing and maintaining entrepreneurial ventures. One such opportunity may exist for consultants who could help manufacturers to design, merchandise, and/or market their products. Such a person might be employed by firms of all sizes that do not require these services on a full-time basis.
- **Increase opportunities for cooperative efforts and teamwork within courses.** In order to prepare students for the cooperative environment in industry, group projects of various kinds can be incorporated into courses. New strategies even include team testing. Along with providing opportunities for teamwork, courses should provide skills for effective teamwork and group communication.
- **Increase interdisciplinary projects among faculty and students.** In order to learn more about other disciplines and their philosophies, both students and faculty should be encouraged to participate in interdisciplinary projects. Suggested disciplines include

industrial engineering, marketing, business administration, computer science, interior design, and industrial technology. This approach can improve the quality and scope of projects, which can be added to one's portfolio. For these projects, faculty can also provide skills in team building and cooperation.

- **Seek new support areas and alliances that provide expertise that faculty lack.** In a time when faculty are faced with a glut of knowledge in their own disciplines, it is impossible for them to stay abreast of developments in support disciplines as well. Ideal support areas include business-administration, marketing, industrial engineering, mathematics, computer science, and industrial technology. Students from support areas should also be encouraged to take courses in the apparel production curriculum.
- **Work with students to improve skills in mathematics and communications.** Although industrial engineering is an ideal minor for apparel production majors, it is seldom elected. The necessity for mathematical skills is usually the reason. Apparel production students are usually relegated to lower-level courses that do not require such skills. This deficiency often precludes their taking courses in quality control and costing. The same is true of courses in other disciplines.

Instead of catering to students' deficiencies, faculty might consider helping them to enhance their mathematical skills. Introductory or remedial mathematics courses or units within existing apparel production courses might give them the background needed to pursue more advanced courses in other disciplines. Skills in writing and other communications could be augmented in the same way.

- **Explore merchandising opportunities within apparel production.** This study revealed numerous career opportunities for graduates with an emphasis in merchandising. Manufacturers mentioned seven positions, including marketing, merchandising, design, and administration, for which they would consider merchandising graduates. Merchandising courses could be expanded to prepare students for jobs in manufacturing as well as retailing.
- **Help students to develop a portfolio of creative and technical work.** Although manufacturers gave low ratings to portfolio development, having a portfolio that contains a variety of projects may help graduates to substantiate their level of expertise. It would also help to offset stiff competition for industry jobs and to counteract the poor image of educational institutions and apparel production programs that were evidenced in this study.

The suggested portfolio would go beyond the traditional fashion sketches to encompass an array of projects, including CAD, costing, design development, written and illustrated specifications, and those that resulted from team efforts. Whereas most creative disciplines, such as interior design, art, landscape architecture, and architecture, require portfolio development, most apparel programs that developed out of home economics do not. In every course, students could develop a project that demonstrates a particular expertise. This might be an alternative to a final examination.

- **Change the name of remaining home-economics programs.** The manufacturers in this study indicated that they would consider a home economics (clothing and textiles) major for only one of 88 jobs. Because majors that are often part of home economics—retailing, merchandising, textiles, design, and apparel production—were considered for several jobs,

one might conclude that the name is the source of contention. Old stereotypes die hard. The traditions of the past to which many home economists cling may preclude future opportunities. If a name change will enable graduates to be considered for jobs, it would be advisable.

- **Implement a public-relations effort to enhance the image of apparel production programs.** After the apparel production program becomes more viable and after several students have found productive employment within the industry, a public relations effort would help to enhance the program's image. The public relations campaign should be used to authenticate the program's worth, not to defend it. A well-planned campaign would demonstrate the program's success and illuminate its possibilities.
- **Reallocate resources to more successful programs.** If colleges can find neither the skill nor the funding to enhance apparel production programs, they might consider reallocating resources to more salient curricula. Some faculty may find it most expeditious to discontinue the apparel production specialty. Perhaps every department does not need every curriculum. Faculty must decide where their strongest resources—both material and human—lie and develop those programs to the fullest extent.

Using the List of Competencies as a Guide for Curriculum Development

The list of content and personal competencies can be used as a guide for developing and evaluating apparel production curricula. Manufacturers' ratings are useful in determining whether a particular competency should be introduced, strengthened, maintained at its current level, de-emphasized, or eliminated. In this study, manufacturers rated each competency on a scale of 1-3 (1 =

not important, 2 = somewhat important, and 3 = very important). Competencies rated between 2.5 and 3 should receive top priority in the curriculum. There were 13 competencies in this category, which are listed below in descending order according to their means:

1. Teamwork
2. Listening
3. Motivation
4. Problem solving
5. Leadership
6. Time management
7. Organization
8. Oral communications on an individual basis or in a group setting
9. Decision-making skills
10. Internal written communications, such as preparing in-house reports and memos
11. Creative thinking
12. Negotiating
13. Quality control

Competencies rated between 2 and 2.49 should receive second priority in the apparel production curriculum. The 21 competencies in this category are also listed in descending order. Because several competencies had the same mean, their ranks are not absolute. They are:

14. Business, ethics, and public policy
15. General management
16. Self presentation in business
17. Computer applications for the garment industry

18. Mathematics or accounting
19. Garment costing or cost analysis
20. Salesmanship
21. Stress management
22. Public speaking to an external audience
23. Total quality management (TQM)
24. Strategic planning
25. Organization, ownership, and operation of a manufacturing firm
26. Internship experience with a textile or apparel manufacturer
27. Evaluation of garment quality
28. Principles of marketing
29. Apparel production assembly processes
30. Personnel or human resource management
31. External written communications, such as preparing annual reports, press releases, and other promotional materials
32. Organization and interrelationship of the textile, apparel, and retail industries
33. Garment construction using industrial equipment
34. Understanding other cultures

Competencies rated below 2 should receive careful consideration for modification, de-emphasis, or exclusion from the apparel production curriculum. This group contained 35 competencies, which are listed below in descending order. Several competencies in this group also had the same mean, so their ranks are relative rather than absolute. They are:

35. Factors affecting the domestic textile and apparel industry

36. Principles of economics
37. Garment specification writing
38. Garment design and development
39. Factors affecting the foreign textile and apparel industry
40. Fashion demonstration and sales techniques
41. Retail management
42. Social, psychological, and economic forces that affect clothing behavior
43. Textiles, including the identification, performance, selection, and care of fibers, yarns, fabrics, and finishes
44. Fashion merchandising
45. Fashion promotion and advertising
46. Fitting
47. Flat pattern design techniques
48. Textile testing
49. Clothing needs of individuals throughout the life cycle
50. Visual merchandising or display techniques
51. Foreign language
52. Marker making
53. Pattern grading
54. Couture or designer sewing techniques
55. Fashion theory
56. Chemistry
57. Pattern alterations
58. Art, including basic design, figure drawing, and other techniques

59. Pattern drafting
60. Development of a portfolio of original design work
61. Original textile surface design using fabric printing and dyeing techniques
62. The cross-cultural study of clothing and textiles
63. History of textiles
64. Original fabric design using weaving, knitting, or non-woven techniques
65. Tailoring
66. Draping on the form to create original designs
67. Garment construction using home-sewing equipment
68. History of costume
69. Fashion illustration

Whereas most of the highly-rated competencies are either general or belong to another discipline, many of the competencies with the lowest ratings are integral to clothing and textiles programs. Garner and Buckley's (1988) study, which examined fashion marketing curricula, yielded similar results. Laughlin and Kean's (1995) study of existing curricula indicates that many educators are already implementing some of these modifications. Computer applications are, however, missing from their list of courses.

In conclusion, the findings of the present study indicate that the major content of most apparel production curricula is expendable. Many of the competencies that comprise the very core of clothing and textiles are targets for extinction. One must remember, however, that the competencies were rated according to their value for specific positions. If based upon a different set of jobs, the ratings might vary somewhat.

Educators should be particularly cautious about dropping all inspirational and artistic elements—art, fashion illustration, historic costume, etc.—from the program. Their value to designers might not be apparent to persons with purely technical backgrounds. Throughout history, great designers, including Cristobal Balenciaga, have derived much of their inspiration from art. Creativity is still the fuel that fires the electronic age.

Other competencies with low ratings, such as foreign languages and cultural diversity, also require extremely careful consideration. Although their value may not be apparent now, certain skills may prove to be essential in the future. To drop them from the curriculum might be a serious mistake. When manufacturers recognize the value of these competencies, they will welcome graduates who possess them. Public relations efforts that explain the importance of creativity, foreign languages, cultural awareness, and other devalued competencies might help manufacturers to recognize their potential worth.

In any case, educators must decide where their allegiance lies—with the consumers of higher education or with the traditions of home economics. If graduates are to be employed by industry, change is clearly indicated. The survival of home economics and apparel production in their current state is doubtful. Greater collaboration with industry, realistic program evaluation, the desire and ability to retool, and the willingness to move beyond Lake Placid may enable the profession to greet the twenty-first century.

Recommendations for Future Research

- Query graduates of apparel production programs to determine where they are employed; where they would like to be employed; their level of job satisfaction; who their competitors are; how they would rate the apparel, support, and personal competencies; and how they would modify the curriculum.

- Explore how garment manufacturers are actually using computers, which skills are needed, and what possibilities exist for expansion and training.
- Query other programs from which apparel manufacturers recruit graduates to determine their feelings about linkages with apparel production programs.
- In replications of this study, it would be help to stratify the sample of manufacturers who rate competencies to ensure adequate representation of all product categories, sales volumes, company sizes, and geographic locations.
- Use larger samples for studies with business and industry.

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APPENDICES

APPENDIX A:
LETTER TO POTENTIAL SUBJECTS

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



College of Human Ecology
Office of the Dean
1215 West Cumberland Avenue, Room 110
Knoxville, TN 37996-1900

June 26, 1995

FIELD(Contact)
FIELD(Company)
FIELD(Address)
FIELD(City)

Dear FIELD(Salutation):

Within a week or so, we will be calling to request your participation in a telephone survey of apparel manufacturers that is being conducted through the University of Tennessee. FIELD(Company) was randomly selected from the membership list of the American Apparel Manufacturer's Association.

The purpose of the study is to identify the employment needs of apparel manufacturers. The results will be used to design educational programs that are more responsive to industry. In order for educators to better prepare graduates to serve the industry, your input is essential.

The interviewer will ask general questions about company demographics, such as the overall number of employees and the annual sales volume. He/she will also ask about future hiring plans in the areas of management, design, production, merchandising, marketing, sales, and distribution—particularly as they relate to college graduates.

The names of the company and its employees will remain confidential. The questionnaire will be identified only by number. Furthermore, the data being collected is for informational purposes only and will not be used to solicit jobs, services, funds, or participation in other activities. In addition, the company's name will not be placed on any mailing lists.

The interview should last only about five to 15 minutes. If the call comes at an inappropriate time, the interviewer will gladly make an appointment for a time that is more convenient. If you have questions, please do not hesitate to ask the interviewer. Also please feel free to contact me at 601-323-1411.

Sincerely,

Phyllis Bell Miller
Principal Investigator

Jacquelyn DeJonge, Ph.D.
Dean and Advisor

Undergraduate Advising
(615) 974-6276

Graduate Studies
(615) 974-5224

Dean
(615) 974-3385

Business Office
(615) 974-6284

FAX
(615) 974-2617

APPENDIX B:
QUESTIONNAIRE

1995 Apparel Industry Study

Company ID: _____

Disk ID: _____

Company: _____ Contact Name: _____

Phone Number: _____ - _____ - _____

(NOTE: All contact people should have gotten a letter explaining the study from Phyllis Miller.)

Part I

Hello, my name is _____. I am calling from Mississippi State University. We are doing a study to determine the future employment needs of the apparel manufacturers. The results will be used to design educational programs that are more responsive to the industry. All answers will be kept confidential. If you feel a question is too sensitive, you need not answer it.

This interview will take about 10 minutes. May I start?

REFUSED Thank you. Good Bye. (Record refusal in status report.)

YES, that's me. ((Skip to top of PART II))

YES, just a minute. I'll get that person (When person answers, skip to PART II)

No, he/she is not available at this time.

IF NO, when would be a good day and time to call back?

Date: _____

Time: _____

For whom should I ask (if different from name above)? _____

Phone number (if different from above): _____ - _____ - _____

PART II

Hello, my name is _____. I am calling from Mississippi State University. We are doing a study to determine the future employment needs of the apparel manufacturers. The results will be used to design educational programs that are more responsive to the industry. All answers will be kept confidential. If you feel a question is too sensitive, you need not answer it.

This interview will take about 10 minutes. May I start?

YES, start interview on computer.

NO, not now. Call back later

IF NO, when would be a good day and time to call back?

Date: _____

Time: _____

For whom should I ask (if different from name above)? _____

Phone number (if different from above): _____ - _____ - _____

REFUSED. Thank you. Good Bye. (Record refusal in status report.)

STATUS REPORT

CONTACT RESULT (Enter Date)	1	2	3	4	5
Completed	_____	_____	_____	_____	_____
Refused	_____	_____	_____	_____	_____
No Answer	_____	_____	_____	_____	_____
Call Back	_____	_____	_____	_____	_____
Busy	_____	_____	_____	_____	_____
Answer Machine	_____	_____	_____	_____	_____
Disconnected/Bad #	_____	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____
Terminated in middle (call back)	_____	_____	_____	_____	_____

If terminated in middle and you need to call back to complete the interview, enter date and time to call back below:

Date: _____

Time: _____

Disk ID _____

Intro

US Apparel Industry Study
Spring 1995

Press any key to start the interview.

coid

Enter company id from company list:

Respondent disk id is:

(Enter this number on status sheet.)

Job

What is your position within your company?

1. President
 2. Owner
 3. Chairperson
 4. Chief Executive Officer
 5. Vice President/Vice Chairperson
 6. Secretary (Of the Corporation)
 7. Treasurer
 8. Human Resource/Personnel Director/Assistant Director
 9. College Recruiter
 10. Plant Manager/Assistant Manager
 11. Department Manager/Assistant Manager
 12. Human Resource/Personnel Officer/Assistant/Secretary
 13. Other:
 14. Don't Know
 15. Refused
-

function

Which of the following functions are performed by your company at this location or at its other branches or plants?

1. Merchandising and/or product design
 2. Piece goods manufacture
 3. Production
 4. Marketing
 5. Sales and distribution to retailers or wholesalers
 6. Retail sales
 7. Other:
 8. That is all
 9. Don't Know
 10. Refused
-

salesvol

What was your company's overall sales volume in 1994?

1. Under \$35 million
 2. \$35 to \$99 million
 3. \$100 million or more
 4. Don't Know
 5. Refused
-

empl

Including all sites, how many employees does your company have?

1. Under 50
 2. 50 to 99
 3. 100 to 249
 4. 250 to 499
 5. 500 or more
 6. Don't Know
 7. Refused
-

othrbran

Does your company have other branches or plants?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

wherebr

Does your company have branches or plants in other states or U.S. territories or in Canadian provinces or territories?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

othrcon

Does the company have branches or plants in other countries?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

uscit

Does your company assign U.S./Canadian citizens to work in plants or branches in other countries?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

flpref

Do employees with foreign language skills get preference for assignments in other countries?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

dobusoth

Does the company do business with firms or clients in other countries?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

langpref

Do employees with foreign language skills get preference for assignments that involve other countries?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

leadin

Now I would now like to ask your opinion about college programs.

Press Any Key to Continue.

twoyrc

How well are two-year or community colleges preparing students to work in the garment industry?

1. Not well at all,
 2. Well or
 3. Very well
 4. Don't Know
 5. Refused
-

foryrc

How well are colleges and universities that offer bachelor's and graduate degrees preparing students to work in the garment industry?

1. Not very well,
 2. Well or
 3. Very well
 4. Don't Know
 5. Refused
-

facftwo

How familiar are faculty in community colleges with the garment industry's needs?

1. Not at all familiar.
 2. Somewhat familiar or
 3. Very familiar
 4. Don't Know
 5. Refused
-

facffc

How familiar are faculty in 4 year colleges and universities with the garment industry's needs?

1. Not at all familiar,
 2. Somewhat familiar or
 3. Very familiar
 4. Don't Know
 5. Refused
-

tworesp

How valuable are educators in community colleges as resource persons for the garment industry?

1. Not at all valuable,
 2. Somewhat valuable or
 3. Very valuable
 4. Don't Know
 5. Refused
-

forresp

How valuable are educators in 4 year colleges and universities as resource persons for the garment industry?

1. Not at all valuable,
 2. Somewhat valuable or
 3. Very valuable
 4. Don't Know
 5. Refused
-

intro2

Next I'd like to ask a few questions about your company's FUTURE hiring plans in areas OTHER THAN accountancy and finance.

In the near future, for how many positions is your company seeking persons with at least a bachelor's degree?

1. None
 2. One
 3. Two or more
 4. Don't Know
 5. Refused
-

nextpos1

What is the next position in areas other than accountancy and finance for which your company is seeking persons with at least a bachelor's degree?
Enter job title for position 1:

NOTE: If Don't Know or Refused, enter that answer.

nextpo2

What is the second position in areas other than accountancy and finance for which your company is seeking persons with at least a bachelor's degree?

Enter job title for position 2:

NOTE: If Don't Know or Refused, enter that answer.

pos1

For position 1, which major or majors would the company most prefer?

1. Accountancy
 2. Apparel Production
 3. Art
 4. Business Administration
 5. Computer Science
 6. Economics
 7. Education
 8. Engineering
 9. Fashion Design
 10. Finance
 11. Home Economics/Clothing and Textiles
 12. Industrial Technology
 13. Liberal Arts
 14. Marketing
 15. Mathematics
 16. Merchandising
 17. Retailing
 18. Textiles/Textile Science
 19. Other:
 20. That is all
 21. Don't Know - Refused
-

plwhen

When does the company plan to fill this position?

1. Immediately/As Soon As Possible
 2. Within 6 Months
 3. Between 6 Months and A Year
 4. More Than A Year from now
 5. When Funds Are Available
 6. Other:
 7. Don't Know
 8. Refused
-

noba1

Would your company consider hiring someone without a bachelor's degree for this position?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

pos2

For position 2, which major or majors would the company most prefer?

1. Accountancy
 2. Apparel Production
 3. Art
 4. Business Administration
 5. Computer Science
 6. Economics
 7. Education
 8. Engineering
 9. Fashion Design
 10. Finance
 11. Home Economics/Clothing and Textiles
 12. Industrial Technology
 13. Liberal Arts
 14. Marketing
 15. Mathematics
 16. Merchandising
 17. Retailing
 18. Textiles/Textile Science
 19. Other:
 20. That is all
 21. Don't Know - Refused
-

p2when

When does the company plan to fill this position?

1. Immediately/As Soon As Possible
 2. Within 6 Months
 3. Between 6 Months and A Year
 4. More Than A Year from now
 5. When Funds Are Available
 6. Other:
 7. Don't Know
 8. Refused
-

noba2

Would your company consider hiring someone without a bachelor's degree for this position?

1. Yes
 2. No
 3. Don't Know
 4. Refused
-

intro3

I am going to read a list of concepts and skills that can be taught in college or that a person can acquire individually. For each one, tell me if it is not important, important, or very important, for the position of

The first set of concepts deal specifically with the apparel industry.

Press Any Key to Continue.

Appas

Apparel production assembly processes

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

cloneed

Clothing needs of individuals throughout the life cycle

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

pcapp

Computer applications for the garment industry

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

sewtech

Couture or designer sewing techniques

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

portf

Development of a portfolio of original design work

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

drap

Draping on the form to create original designs

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

garqual

Evaluation of garment quality

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

facdom

Factors affecting the domestic textile and apparel industry

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

facfor

Factors affecting the foreign textile and apparel industry

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

fashdemo

Fashion demonstration and sales techniques

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

fashill

Fashion illustration

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

fashmer

Fashion merchandising

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

fashpro

Fashion promotion or advertising

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

fashtheo

Fashion theory

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

fit

Fitting

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

flatpat

Flat pattern design techniques

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

garconin

Garment construction using industrial equipment

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

garconho

Garment construction using home-sewing equipment

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

garcost

Garment costing or cost analysis

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

gardes

Garment design and development

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

garwrit

Garment specification writing

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

hiscos

History of costume

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

histext

History of textiles

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

intern

Internship experience with a textile or apparel manufacturer

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

markma

Marker making

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

interrel

Organization and interrelationship of the textile, apparel, and retail industries

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

fabdes

Original fabric design using weaving, knitting, or non-woven techniques

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

textsur

Original textile surface design using fabric printing and dying techniques

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

patalt

Pattern alterations

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

patdraft

Pattern drafting

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

patgrad

Pattern grading

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

socpsy

Social, psychological, and economic forces that affect clothing behavior

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

talor

Tailoring

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

textst

Textile testing

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

textid

Textiles, including the identification, performance, selection, and care of fibers, yarns, fabrics, and finishes

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

cult

The cross-cultural study of clothing and textiles

1. Not important
2. Somewhat important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

vismer

Visual merchandising or display techniques

1. Not important
2. Somewhat important
3. Very important
6. Don't Know
5. Refused

How important is _____ for the position of

nextgr

The next group of competencies relates to other courses that may be helpful in the garment industry. Please rate each as being not very important, important or very important for the for the position of

Press Any Key to Continue.

art

Art

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

bus

Business, ethics, and public policy

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

chem

Chemistry

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

lang

Foreign language

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

lantwo

Which are the two most preferred languages?

NOTE: Enter the two languages mentioned; if only one enter that language; if Don't Know or Refused, enter that answer.

mang

General management

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

math

Mathematics or accounting

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

organ

Organization, ownership, and operation of a manufacturing firm

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

resman

Personnel or human resource management

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

econ

Principles of economics

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

market

Principles of marketing

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

qc

Quality control

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

retman

Retail management

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

selfpres

Self presentation in business

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

planing

Strategic planning

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

tqm

Total quality management

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

othcult

Understanding other cultures

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

uncult

The last group of competencies deal with personal skills. Please rate each as not important, important or very important for the position of

Press Any Key to Continue.

creatt

Creative thinking

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

decmak

Decision making

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

extcom

External written communications, such as annual reports, press releases, and promotional materials

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

intcom

Internal written communications, such as in-house reports and memos

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

leader

Leadership

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

listen

Listening

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

mot

Motivation

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

neg

Negotiating

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

oralcom

Oral communications on an individual basis or in a group setting

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

organi

Organization

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

probsol

Problem solving

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

pubspk

Public speaking to an external audience

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

salesman

Salesmanship

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

stressm

Stress management

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

teamw

Teamwork

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

timem

Time management

1. Not important
2. Important
3. Very important
4. Don't Know
5. Refused

How important is _____ for the position of

ynoth

Which of the following are reasons why your company is not planning to hire more college graduates?

1. College graduates require too high a salary
 2. Few or no applicants with college degrees
 3. Our company prefers to promote and train from within
 4. Our company can find people without degrees who are qualified
 5. Our company can provide the necessary training
 6. College graduates do not have the required skills or qualifications
 7. College apparel programs focus too much on women's wear
 8. Other:
 9. That is all
 10. None of the above
 11. Don't Know
 12. Refused
-

thanks

This completes our interview. Thank you for your cooperation.

Press Any Key to Continue.

end

This respondent is completed.

Press Any Key to Continue.

APPENDIX C:
AGGREGATE DATA

Table A-1**Frequencies for the Level of Preparation for Industry Provided by Two- & Four-Year Colleges ($n = 90$)**

College Type	NW	W	VW	DK
Two-year colleges	40	22	11	17
Four-year colleges	17	30	34	9

Note. NW = Not Well; W = Well; VW = Very Well; DK = Don't Know.

Table A-2**Frequencies for Familiarity With Industry's Needs Among Faculty of Two- & Four-Year Colleges ($n = 90$)**

College Type	NF	SF	VF	DK
Two-year colleges	42	20	9	19
Four-year colleges	31	28	17	14

Note. NF = Not Familiar; SF = Somewhat Familiar; VF = Very Familiar; DK = Don't Know.

Table A-3**Frequencies for the Value of Faculty in Two- & Four-Year Colleges as Resource Persons for Industry ($n = 90$)**

College Type	NV	SV	VV	DK
Two-year colleges	45	20	13	12
Four-year colleges	31	26	22	11

Note. NV = Not Valuable; SV = Somewhat Valuable; VV = Very Valuable; DK = Don't Know.

Table A-4
Frequencies for the Importance of Apparel-Related Competencies for Position 1 (*n* = 51)

Apparel-Related Competency/Concept	NI	SI	VI	DK
Apparel production assembly processes	10	24	16	1
Clothing needs of individuals throughout the life cycle	26	17	6	2
Computer applications for the garment industry	6	17	26	2
Couture or designer sewing techniques	27	19	3	2
Development of a portfolio of original design work	35	9	5	2
Draping on the form to create original designs	37	10	2	2
Evaluation of garment quality	14	13	22	2
Factors affecting the domestic textile and apparel industry	14	23	12	2
Factors affecting the foreign textile and apparel industry	20	20	9	2
Fashion demonstration and sales techniques	25	11	13	2
Fashion illustration	38	9	2	2
Fashion merchandising	23	16	10	2
Fashion promotion or advertising	26	12	11	2
Fashion theory	26	18	3	4
Fitting	27	11	11	2
Flat pattern design techniques	24	19	6	2
Garment construction using industrial equipment	18	10	20	3
Garment construction using home-sewing equipment	35	12	1	3
Garment costing or cost analysis	9	13	26	3

Note. NI = Not Important; SI = Somewhat Important; VI = Very Important; DK = Don't Know.

Table A-4
(continued)

Apparel-Related Competency/Concept	NI	SI	VI	DK
Garment design and development	17	20	12	2
Garment specification writing	16	21	12	2
History of costume	39	6	4	2
History of textiles	32	16	1	2
Internship experience with a textile or apparel manufacturer	8	22	19	2
Marker making	25	21	3	2
Organization and interrelationship of the textile, apparel, and retail industries	13	19	17	2
Original fabric design using weaving, knitting, or non-woven techniques	35	10	4	2
Original textile surface design using fabric printing and dyeing techniques	35	15	2	2
Pattern alterations	31	13	5	2
Pattern drafting	35	8	6	2
Pattern grading	30	11	8	2
Social, psychological, and economic forces that affect clothing behavior	23	15	11	2
Tailoring	34	12	3	2
Textile testing	23	22	4	2
Textiles, including the identification, performance, selection, and care of fibers, yarns, fabrics, and finishes	20	21	8	2
The cross-cultural study of clothing and textiles	34	11	4	2
Visual merchandising or display techniques	29	11	9	2

Note. NI = Not Important; SI = Somewhat Important; VI = Very Important; DK = Don't Know.

Table A-5
Frequencies for the Importance of Support Competencies for Position 1 ($n = 51$)

Support Competency/Concept	NI	SI	VI	DK
Art	32	15	5	0
Business, ethics, and public policy	6	14	31	0
Chemistry	34	10	7	0
Foreign language	27	20	4	0
General management	4	19	28	0
Mathematics or accounting	4	24	23	0
Organization, ownership, and operation of a manufacturing firm	9	20	22	0
Personnel or human resource management	14	17	20	0
Principles of economics	14	26	11	0
Principles of marketing	12	19	20	0
Quality control	2	20	29	0
Retail management	23	17	11	0
Self presentation in business	6	17	28	0
Strategic planning	6	25	20	0
Total quality management	9	17	25	0
Understanding other cultures	13	20	15	2

Note. NI = Not Important; SI = Somewhat Important; VI = Very Important; DK = Don't Know.

Table A-6
Frequencies for the Importance of Personal Competencies for Position 1 ($n = 51$)

Personal Competency/Concept	NI	SI	VI	DK
Creative thinking	2	17	32	0
Decision making	2	12	37	0
External written communications, such as preparing annual reports, press releases, and other promotional materials	15	17	19	0
Internal written communications, such as preparing in-house reports and memos	1	15	35	0
Leadership	0	13	38	0
Listening	0	9	42	0
Motivation	0	9	42	0
Negotiating	5	13	33	0
Oral communications on an individual basis or in a group setting	2	11	38	0
Organization	0	14	37	0
Problem solving	1	10	40	0
Public speaking to an external audience	9	17	25	0
Salesmanship	6	21	24	0
Stress management	3	27	21	0
Teamwork	0	5	46	0
Time management	1	11	39	0

Note. NI = Not Important; SI = Somewhat Important; VI = Very Important; DK = Don't Know.

VITA

Phyllis Bell Miller was born in Washington, D.C., where she attended elementary and junior high schools. Her family then moved to Detroit, Michigan, where she attended Denby High School and Wayne State University. In 1985, she received a certificate in couture from the Academy Nvart in Oak Park, Michigan. She received a bachelor of arts degree in clothing and textiles from Mundelein College in Chicago, Illinois in 1977. In 1980, she received a master of arts degree in functional clothing design and rehabilitation from Michigan State University. Miller has worked as a fashion and costume designer both in industry and in her own firm.

Miller began working with AutoCAD® software in 1985 as a graduate student at the University of Tennessee, where she began to explore microcomputer applications for the garment industry. She is the developer of ApparelCAD™, Instant Designer™, and Display Shop™ software. These AutoCAD applications are used internationally in education and industry. Miller is also the author of the Delmar book *AutoCAD for the Apparel Industry*, which is the first book ever published on applying CAD software to fashion. She also authored the accompanying instructor's guide and applications disk.

Miller is an assistant professor at Mississippi State University, where she teaches CAD and other computer applications for apparel, interior design, and landscape architecture. She integrates computer applications into all of her courses, including visual design, product evaluation, and visual merchandising. Throughout the year, Miller travels internationally giving seminars and computer workshops on fashion and costume design and related topics.

Miller's interests include travel, cookery and ethnic cuisine, interior design, photography, shopping for unusual items, books, movies, theater, art, and writing. She has visited Europe, Asia, Africa, Central and South America, Canada, and three-fourths of the United States.