Facilitating Students' Integration of Textiles and Clothing Subject Matter Part Two: Substantiating the Applicability of Proposed Structures

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Abstract

In recent history the field of textiles and clothing has witnessed a shift from a home economics to a professional (industry) focus and an increased effort to integrate elements of varied textiles and clothing subject matter around a common perspective. Literature elucidating the importance of integration of textiles and clothing subject matter has been written for the scholar and does not clearly explicate integration of subject matter for the student or how integration can serve his/her purpose of professional development. In part one we described the dimensions and components of an overarching model and a taxonomy of value (i.e., benefits derived from textile products and related environments) for use in the classroom to help students conceptually integrate subject matter to assist their professional development. In part two we utilize the concept of schema to justify the use of structures in fostering cognitive integration of subject matter. We substantiate the applicability of these structures for integrating textiles and clothing core subject matter by referring to educational materials used at universities within the United States. We also offer suggestions for application of these structures within one's program. We propose these working structures as a beginning for all faculty in textiles and clothing programs to develop a balanced integrative structure representing all aspects of the program and the larger textiles and apparel industry.

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As discussed in part one, scholars (Kaiser & Damhorst, 1991; Laughlin & Kean, 1995, 1996) have shown that integration of subject matter is important to the field of textiles and clothing and is necessary for the development of students. Educators have begun to implement this goal. Student assignments have been developed that require higher cognitive thought processes involving integration of subject matter. Capstone courses assess the student's ability to integrate subject matter across courses related to professional decisions. Yet we have not identified a learning aid for students that communicates to them the holistic nature of the curriculum and that facilitates the complex process of integrating subject matter. Does this suggest that the onus to integrate across subject matter is being placed on students without the assistance of educators? Educators should be more than conduits of information and monitors of student progress. It is the role of an educator to facilitate higher level learning such as critical thinking and problem solving. We propose that our model and taxonomy facilitate higher level learning because they may assist the integration of information within and across subject matter areas.

In the present paper we address how educators can use our model and taxonomy and substantiate the applicability of these structures for integrating textiles and clothing core subject matter by referring to evidence from course materials used at a variety of universities within the United States. We (a) present theoretical and empirical support for the incorporation of learning aids, such as the model and taxonomy, to assist integration of subject matter, (b) demonstrate that our model and taxonomy integrate an array of

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textiles and clothing subject matter, and (c) suggest strategies to implement the model and taxonomy as learning aids.

Schema Theory and Learning Aids

Schema theory emphasizes the importance of cognitive structures in the learning process (Dochy & Bouwens, 1990; Mealy & Nist, 1989). In schema theory, schemata are preexisting cognitive frameworks used to process and make sense out of the tide of information bombarding the individual (Neisser, 1976). Schemata become filing systems to organize an array of incoming information and to facilitate retention, retrieval, usage, and integration of information (Dochy & Bouwens, 1990). Schemata direct the search for information but they are also flexible, accommodating new information (Dochy & Bouwens, 1990). Research supports the effectiveness of schemata in facilitating integration and retrieval of information (Graber, 1984).

Education scholars have suggested that instructors use learning aids and teaching strategies rooted in schema theory (e.g., Barron, 1969; Moore & Readence, 1984; Mealy & Nist, 1989). Instructional materials that foster schemata acquisition and activation provide a foundation for comprehension and integration of new content (Driscoll, 1994; Sweller, 1990). Instructors have been advised to use *graphic organizers* to introduce students to new subject matter content prior to and/or in conjunction with more detailed and thorough coverage of the material (Barron, 1969; Moore & Readence, 1984; Robinson & Kiewra, 1995). Graphic organizers are hierarchically arranged matrices, tree diagrams, or models of key terms and concepts (Kiewrea, Dubois, Christian, & McShane, 1988). According to Mealy and Nist (1989), graphic organizers help to (a) build and activate students' background knowledge, (b) cue students' awareness of relevant background knowledge, and (c) focus students' attention. Smilkstein (1990-1991) found that schema-based learning aids help students construct new knowledge, use existing knowledge in new ways, and gain a more complex understanding of existing knowledge.

Although findings have been somewhat inconsistent,[1] research has supported the effectiveness of graphic organizers in many learning situations (Mealy & Nist, 1989; Moore & Readence, 1984). Graphic organizers have been found to be more effective when used with college students than with younger learners (Moore & Readence, 1984). The graphic organizer has been found to be particularly effective when used to help students (a) see organizational patterns and interrelationships among key concepts (Mealy & Nist, 1989; Robinson & Kiewra, 1995), (b) apply concepts, (c) comprehend, recall, and generalize novel textual material (Griffin, Malone, & Kameenui, 1995), and (d) integrate, organize, and synthesize ideas in written form (Robinson & Kiewra, 1995).

In line with these educational suggestions and findings, we offer two graphic organizers, the integrative model and the taxonomy of value derived by consumers from apparel products and related environments. These organizers could orient college students to new subject matter content prior to more detailed and thorough coverage of the material in their curriculum (e.g., Barron, 1969; Moore & Readence, 1984; Robinson & Kiewra, 1995). Further, these organizers could help students to (a) see organizational patterns and interrelationships among key concepts within a course, (b) build and activate students' background knowledge from past courses and (c) integrate that knowledge with new knowledge as they progress through their academic program (e.g., Mealy & Nist, 1989; Robinson & Kiewra, 1995; Smilkstein, 1990-1991).

Instructors have reacted very positively to graphic organizers, noting that graphic organizers help them to feel prepared, competent, and organized (Moore & Readence, 1984). Further, instructors have indicated that the use of graphic organizers enables them to (a) feel more in control of the learning activity, (b) be more sensitive to the demands of the learning task, and (c) clarify learning objectives more clearly (Moore & Readence, 1984). Therefore, graphic organizers appear to foster competence in students as well as in educators.

Substantiating the Model and Taxonomy as Representations of Core Textiles and Clothing Subject Matter

Thus far, we have illustrated that theory and empirical research support the use of graphic organizers (i.e., the model and taxonomy) to assist students' integration of subject matter. Recalling our discussion in Part One, our model and taxonomy were inductively generated by (a) analyzing the curriculum of our department, (b) interviewing apparel professionals, and (c) reviewing literature from inside and outside of textiles and clothing. The next step in substantiating the applicability of the model and taxonomy was to demonstrate how our graphic organizers represent and integrate core textiles and clothing subject matter in university programs within the United States. This was accomplished by correlating components of the graphic organizers with core textiles and clothing subject matter areas identified by Kaiser and Damhorst (1991) and Laughlin and Kean (1995).

[1]Research concerning the use of graphic organizers in the classroom has produced inconsistent results and has incorporated methods that have been criticized as inappropriate (for review, see Dunston, 1992; Robinson & Kiewra, 1995). In some cases, results have been confounded by external variables. Although research does support the use of graphic organizers with college-level students (e.g., Robinson & Kiewra, 1995), questions remain regarding (a) what types of graphic organizers are most effective, (b) what types of benefits are gleaned by students using such organizers, (c) what types of students benefit most from the use of such organizers, and (d) at what point during the learning process these organizers should be introduced (Dunston, 1992). Further, it should be noted that our use of graphic organizers diverges from implementations tested in previous research. To date, researchers have only explored the use of graphic organizers that model a very limited amount of course content, such as a single book chapter. In this paper, however, we present graphic organizers intended to structure an entire academic course or curriculum.

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Kaiser and Damhorst (1991) developed a meta-perspective for textiles and clothing subject matter representing how textile and clothing products are evaluated, produced, distributed, and used in everyday life. Kaiser and Damhorst's perspective consists of three multidimensional and overlapping thematic areas that they refer to as (a) *textile product evaluation,* (b) *textile and apparel production and distribution systems,* and (c) *appearance and social realities.* Textile product evaluation represents the connection between the physical properties of textiles and apparel products and individuals' responses to those products. Textile and apparel production and distribution systems includes manufacturing, marketing, and exchange processes that affect how and where products become available to consumers in different parts of the world. Appearance and social realities refers to how individuals use textile and apparel products to lend meaning to the self, the others with whom they interact, and their everyday lives.[2]

Laughlin and Kean (1995) also have addressed the components that constitute textiles and clothing scholarship, but on a more concrete level. These researchers identified a core of seven curricular elements common to almost all textiles and clothing programs in the United States: *beginning textiles, color and design principles, socio-psychological aspects of clothing, history of clothing, cultural aspects of dress, merchandise operations,* and *fashion theory.* These seven curricular elements can be related to (or merged within) the broader meta-perspective proposed by Kaiser and Damhorst (1991). For instance, courses related to beginning textiles and color and design principles can be subsumed under the thematic area textile product evaluation. Similarly, courses focusing upon merchandise operations could be placed under the domain of textile and apparel production/distribution systems. Finally, the appearance and social realities area could logically incorporate curricular elements addressing the socio-psychology of clothing, the history of clothing, the cultural aspects of dress, and fashion theory.

In the present study, we build upon this previous work by relating our model and taxonomy to the seven core course topics identified by Laughlin and Kean as "universal" (1995, p. 195) and to the Kaiser and Damhorst meta-perspective for integrating textiles and clothing subject matter (1991). In addition to Laughlin and Kean's core areas, we consider the relationship of our model and taxonomy to three additional areas: *apparel production, consumer behavior,* and *functional design.* We included these additional areas to ensure that our analysis would be comprehensive and pertinent for use in programs with more specialized foci. We envision apparel production as compatible with Kaiser and Damhorst's (1991) textile and apparel production/distribution systems. Consumer behavior could be appropriately merged with appearance and social realities, and functional design could be subsumed by texitle product evaluation or textile and apparel production/distribution systems.

To demonstrate that our model and taxonomy address the identified core subject matter areas within textiles and clothing, we reviewed and interpreted content of textbooks and materials (e.g., course syllabi, additional readings) used to teach these topics at universities within the United States.[3] Included in this analysis were books and materials used at Iowa State University as well as books and materials recommended by other educators recognized as major contributors to their subject matter areas. At least three educators in each subject matter area were queried to tap possible differences in approach to the subject matter[4] (see Table 1 for a complete listing of the books and materials surveyed).

Once the materials were gathered, we looked for content that related to the components of our overarching model and our taxonomy of value. We considered the material as addressing a component when the content provided more than a passing acknowledgment of the component and treated the component in some depth. To enhance the reliability and trustworthiness of our interpretations, the first author's independent analyses of the educational materials were checked by the second author. When differences in interpretation arose, the authors re-analyzed the material together, jointly negotiating discrepancies until consensus was reached.

Relationship of the Integrative Model to Core Subject Matter Areas

As outlined in Part I of this paper, our model (Figure 1) represents an interdisciplinary illustration of how *professional decisions* regarding the *product* and/or *environment* offered to the consumer affect the *value* (or benefits) perceived by the *consumer. Socio-cultural* and *individual differences* of the consumer influence perceptions of the product and environment, resulting in differences in perceived or desired value. Further, knowledge about the socio-cultural and individual differences of the consumer and the desired or perceived value is used by textiles and clothing professionals who make decisions affecting the products and environments available for consumption. Both professional decisions about products and environments and consumers' perceptions and evaluations of the *formal, expressive,* and *symbolic* qualities of those products and environments are shaped by larger external factors (aesthetic, economic, legal, political, religious, social, and technological) constituting the *global context* in which our model is situated.

We will now demonstrate that our model can be used as a conceptual framework integrating the ten previously delineated textiles and clothing subject matter areas (i.e., the

[2]Kaiser and Damhorst's perspective keenly encompasses textiles and clothing subject matter, but we believe our model may be easier for students to grasp and to apply to professional situations.

[3]Our analyses were limited to educational materials used within the United States because the research upon which the present paper built (e.g., Laughlin & Kean, 1995) shared this same geographical focus.

[4]Whereas this small survey of nationally recognized educators does not represent all approaches to the topic, we believe it is sufficient to represent current perspectives of the topic. Because each department will refine the interpretive model and taxonomy to reflect their focus and terminology, a small survey of educators is sufficient to develop the rudimentary graphic organizers.

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Table 1. Educational Materials Reviewed

Author(s)	Year	Title
Brown, P.	1998	*Ready-to-wear apparel analysis*
Cahan, L., & Robinson, J.	1984	*A practical guide to visual merchandising*
Carr, H., & Pomeroy, J.	1992	*Fashion design and product development*
Colborne, R.	1996	*Visual merchandising: Thebusiness of merchandise presentation*
Davis, M. L.	1996	*Visual design in dress*
Delong, M. R.	1987	*The way we look: A framework for the visual analysis of dress*
Diamond, E.	1993	*Fashion retailing*
Diamond, J., & Diamond, E.	1996	*Fashion advertising and promotion*
Dickerson, K.	1995	*Textiles and apparel in the global economy*
Engel, J. F., Blackwell, R. D., & Miniard, P. W.	1993	*Consumer behavior*
Glock, R. E., & Kunz, G.	1995	*Apparel manufacturing: Sewn product analysis*
Hatch, K. L.	1993	*Textile science*
Jarnow, J., & Dickerson, K.	1997	*Inside the fashion business*
Kadolph, S. J., & Langford, A. L.	1998	*Textiles*
Kaiser, S. B.	1990	*The social psychology of clothing*
Kunz, G. I.	1998	*Merchandising: Theory, principles, and practice*
Littrell, M. A.	1996	*Cultural perspectives in clothing and textiles*[a]
Mills, K. H., & Paul, J. E.	1988	*Applied Visual Merchandising*
Payne, B., Winakor, G., & Farrell-Beck, J.	1992	*History of costume*
Pegler, M. M.	1995	*Visual merchandising and display*
Phillips, P. M.	1996	*Fashion sales promotion: The selling behind the selling*
Rabolt, N. J., & Miller, J. K.	1997	*Concepts and cases in retail and merchandise management*
Rath, P. M., Peterson, J., Greensley, P., & Gill, P.	1994	*Introduction to fashion merchandising*
Risch, E. H.	1991	*Retail merchandising*
Roach-Higgins, M. E., Eicher, J. B., & Johnson, K. P.	1995	*Dress and identity*
Samson, H. E., & Little, W. G.	1993	*Retail merchandising: Consumer goods and services*
Solomon, M. R.	1996	*Consumer behavior: Buying, having, and being*
Sproles, G., & Burns, L. D.	1994	*Changing appearances: Understanding dress in contemporary society*
Stone, E.	1990	*Fashion merchandising: An introduction*
Torora, P., & Eubanks, K.	1998	*Survey of historic costume*
Watkins, S. M.	1995	*Clothing: The portable environment*

Note. Unless otherwise noted, educational materials reviewed were textbooks.
[a]Course syllabus available from the author, Department of Textiles and Clothing, Iowa State University, Ames, IA.

seven core areas identified by Laughlin and Kean, 1995, as well as our own additions). Each subject matter area is discussed in terms of its relation to the general, overarching model. Figure 2 is based upon our analyses of content included in current educational materials and provides a visual summary of the relationships between the subject matter areas and the individual components of the overarching model. Separate graphic organizers of the specific model components relevant to each subject matter are also provided (Figures 3-10).

Textile Product Evaluation

Beginning Textiles. Our model encompasses content in the beginning textiles subject matter area. In beginning textiles courses fibers, yarns, fabrications, coloration techniques, and finishes are typically discussed in terms of their serviceability for various consumer uses. Issues related to physical and sensual properties, physical comfort, care, appearance retention, durability, and quality are highlighted (Kadolph & Langford, 1998). Students learn to evaluate the quality and performance characteristics of various textile and apparel products. Educators in beginning textiles courses often include discussions of how various product characteristics can satisfy identified consumer wants and needs. Typically, however, these discussions are not a primary focus in such courses. Further, in some textbooks textile components and products are briefly discussed in terms of their aesthetic appeal and effect upon human sensory responses. A cursory glance is given to expressive and symbolic qualities (see Hatch, 1993). For instance, in her chapter on aesthetic appeal, Hatch discusses consumer comments such as "the rustle of this fabric delights me" and "this color of green reminds me of spring" (1993, p. 43). We believe the cursory nature of the content does not merit inclusion in the model (Figure 3) that describes beginning textiles, but we mention it here because we support the strengthening of this content in this subject matter area.

As depicted in Figure 3, beginning textiles focuses on the relationship between the professional decisions made by developers about the product's formal qualities. Emphasis is placed upon the aesthetic benefits (e.g., luster, brightness, color, hand, drape) and the instrumental benefits (e.g., durability, comfort, ease of care) desired and derived by the consumer. Further, and as indicated by the arrows in Figure 3, students of beginning textiles are introduced to the role that aesthetic and instrumental consumer benefits play in influencing the development of products. As an example of how the model components relate to content in beginning textiles,

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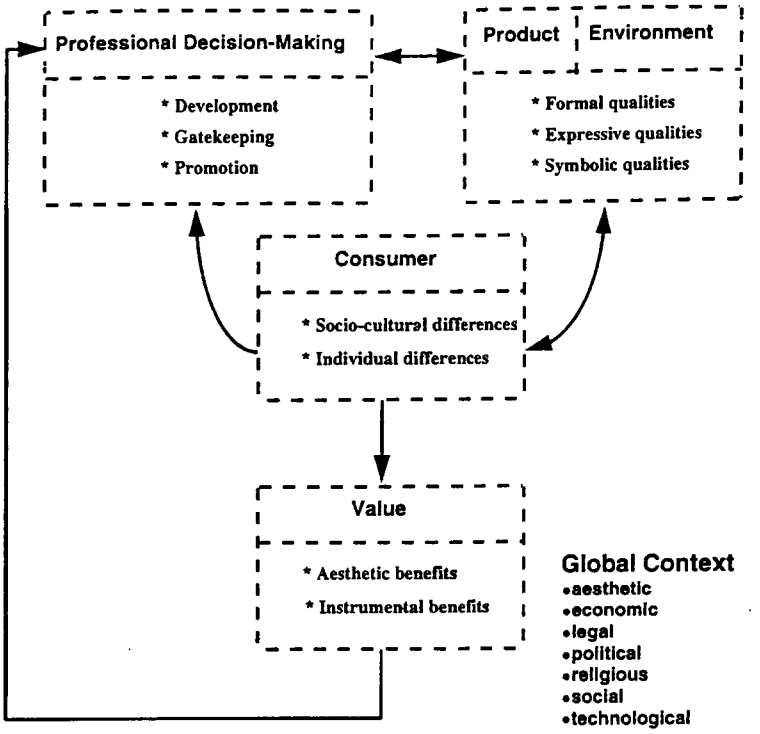

Figure 1. Model for Use in Integration of Textiles and Clothing Subject Matter

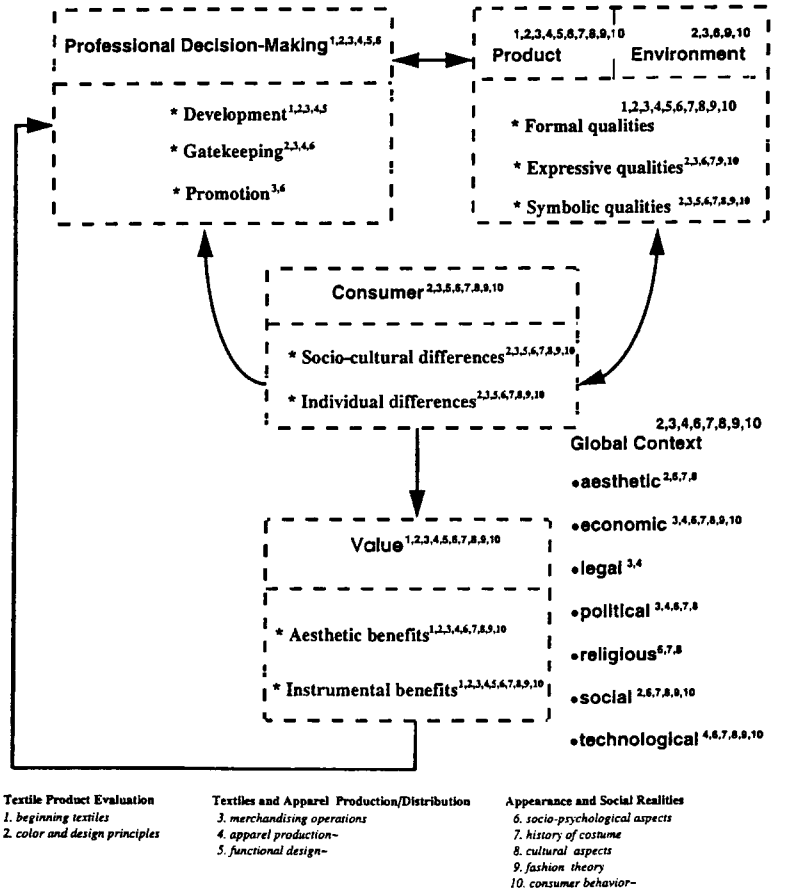

Figure 2. Textiles and Clothing Subject Matter Areas (identified by Kaiser & Damhorst, 1991; Laughlin & Kean, 1995) Addressed by the Model

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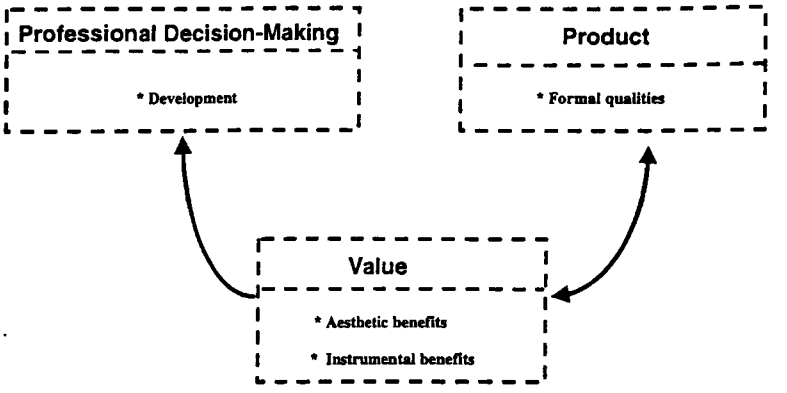

Figure 3. Model Components Relevant to Beginning Textiles Subject Matter

students might evaluate the properties of various fibers for the development of a product such as school uniforms to accommodate desired benefits of the wearers and their parents. The wearers prefer that the bright colored uniforms do not fade and that they feel comfortable against their skin. Parents value efficiency of time and money offered by easy care, low-shrinkage, and durable garments. Thus, students must consider the appropriate fiber to accommodate the formal benefits (both aesthetic and instrumental in nature) sought.

Color and Design Principles. Subject matter content in color and design principles provides students with knowledge related to the elements (e.g., hue, tone, color relationships) and organizing principles (e.g., rhythm, repetition, balance) of design as they define and create textile and apparel products and, in some academic programs, environments. Emphasis is typically placed upon the visual analysis of the clothed body form as a foundation for the development of products reflecting current fashion trends and the needs of the target market. In programs offering visual merchandising courses, color and design principles are often discussed in the context of creating environments (e.g., store displays, fashion shows, advertisements) that promote apparel or textile products. Often, design and visual merchandising textbooks include discussions regarding the expressive or symbolic meanings assigned by viewers (in varied geographic, cultural, and/or temporal contexts) to different

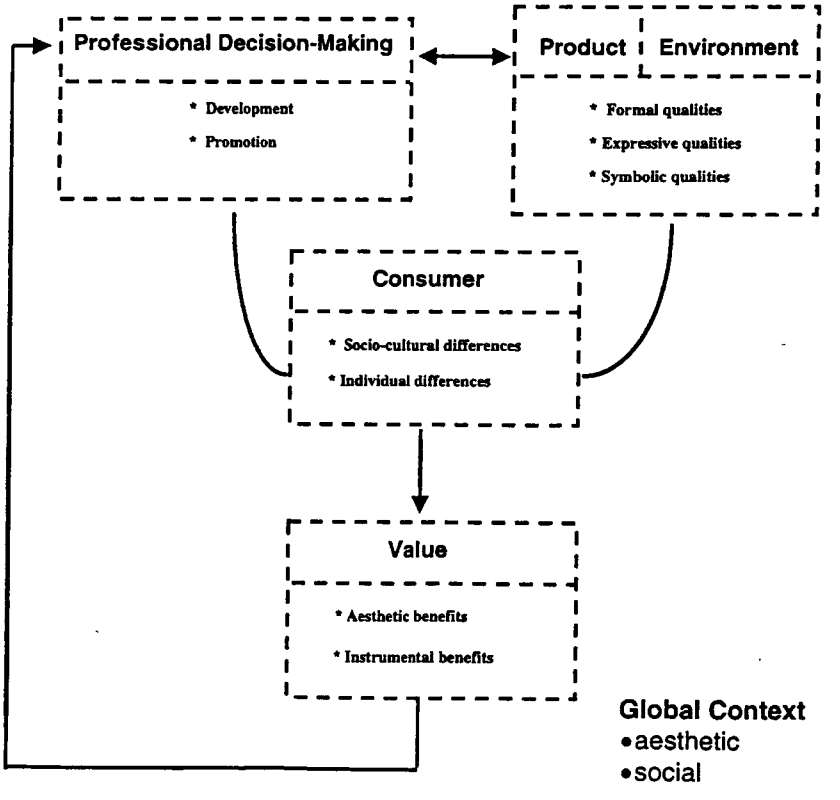

Figure 4. Model Components Relevant to Color and Design Principles Subject Matter

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colors, textures, shapes, lines, etc. (e.g., Cahan & Robinson, 1984; Davis, 1996; DeLong, 1987; Pegler, 1995). In addition, at least one color and design principles text we surveyed acknowledged (a) how cultural values shape what constitutes an acceptable and desired appearance and (b) how individuals use dress to gain acceptance and to communicate symbolically (e.g., Davis, 1996).

Subject matter content in color and design principles is represented by several components of the model (see Figure 4). Educators involved in the teaching of color and design principles focus primarily upon professional decision-making related to developing and promoting the formal, expressive, and symbolic qualities of products and/or environments. Students of color and design principles consider the ways in which aesthetic norms and/or social influences associated with varied global contexts shape socio-cultural and individual differences among consumers and thereby affect (a) the aesthetic and instrumental benefits desired or derived by consumers and (b) the formal, expressive, and symbolic qualities of products and environments developed and promoted with those desired (consumer) benefits in mind. For instance, educators whose courses include color and design principles often emphasize how individual differences in body shape and color can affect professional decisions made about a product. Promoters such as sales consultants may seek to satisfy the consumer's desire to create a pleasing body form (an aesthetic benefit), needing to consider shape or coloring of the body, as well as socio-cultural norms (as influenced by a given global context) about modesty and body ideals.

Textiles and Apparel Production/Distribution

Merchandising Operations. The majority of undergraduate textiles and clothing students pursue degrees in merchandising (Laughlin & Kean, 1995). Subject matter content preparing students for careers in this area covers a broad range of topics that vary in breadth and depth as the student progresses through his/her program of study. In general, education in merchandising operations focuses upon the gatekeeping, promotion, and sometimes development functions of textiles and clothing professionals.

Texts written for the beginning merchandising student typically speak to each of these issues, although in somewhat limited depth (e.g., Diamond, 1993; Jarnow & Dickerson, 1997; Rath, Peterson, Greensley, & Gill, 1994; Stone, 1990). Much attention is devoted to the structure of the textiles and apparel industry and the roles and functions of its various employees and organizations. In addition, these texts often address (again, briefly) consumer-related issues such as market segmentation, product acceptance, consumer buying behavior and influences.

Texts targeting more advanced merchandising students focus more narrowly and deeply upon issues associated with gatekeeping decisions. Emphasis is placed upon the theories and procedures used in planning, purchasing, and maintaining inventories for the profitable management and operation of textile and apparel related businesses. In some texts, attention is given to the globalization (i.e., the production, acquisition, or marketing of products in nondomestic venues) and the various political and economic considerations (e.g., trade agreements and regulations) that such

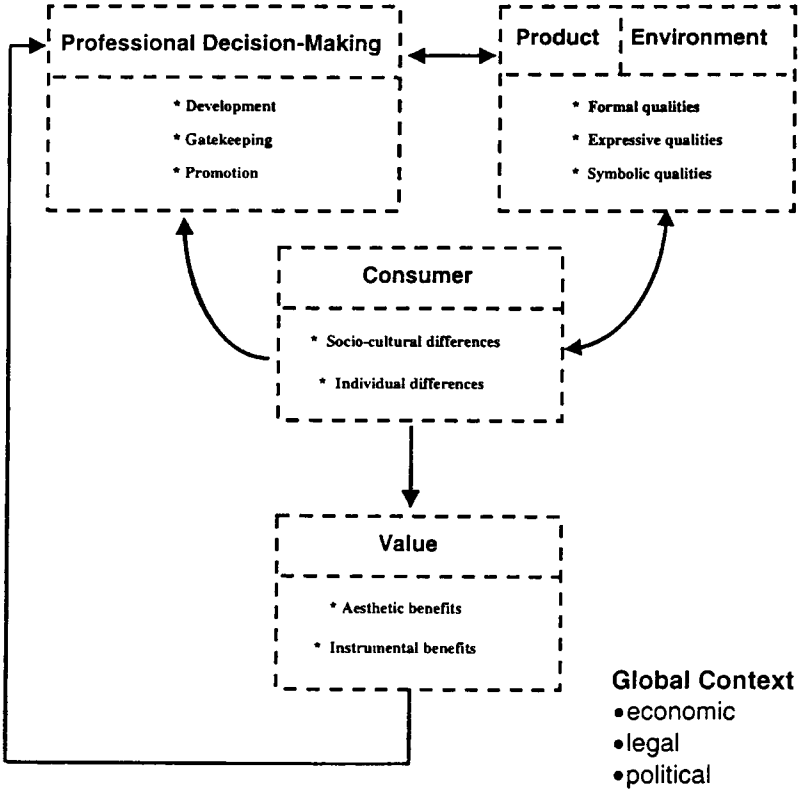

Figure 5. Model Components Relevant to Merchandising Operations Subject Matter

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operations warrant (e.g., Kunz, 1998). Here, then, students apply knowledge from previous coursework concerning target markets, business practices, and profitability to make decisions about (a) which products will best satisfy the needs and desires of the target consumers and (b) how and where to secure those products. In addition, visual merchandising course content related to the promotion function is a common component of more advanced merchandising education. Students are introduced to concepts underlying product promotion via the construction of textiles and apparel environments. Finally, advanced merchandising students often learn about the development function as it is related to the creation of private label apparel products or lines.

Figure 5 depicts the components of the general model that are pertinent to merchandising operations subject matter. As discussed above and depicted in Figure 5, curricular content in merchandising operations focuses upon professional decisions related to development, gatekeeping, and promotion of formal, expressive, and symbolic qualities of the product and/or environment. Central to these professional decisions is the notion that products or environments are created, selected, and promoted based upon the sociocultural and individual differences characterizing the target consumer and the aesthetic and/or instrumental benefits that the consumer derives through consumption or experiencing the product or environment. In the case of global sourcing and/or marketing, texts emphasize that professional decisions are also influenced by the economic, legal, and political structures of the larger global context.

Apparel Production. Content in the subject matter area of apparel production is also reflected in our general model. Apparel production content addresses sewn products analysis. Emphasis is placed upon materials, construction methods, technology, quality standards, and engineering specifications as they affect the production costs, product performance, and quality characteristics of textile and apparel products. Introductory texts in this area typically aim to introduce students to apparel manufacturing and prepare them for professional interaction with many aspects of the sewn products industry (e.g., Brown, 1998). More advanced apparel production texts consider global sourcing, costing, production planning, resource utilization, and quality assurance issues (e.g., Dickerson, 1995; Glock & Kunz, 1995). In addition to this focus on apparel production analysis, programs sometimes include apparel production content in courses such as flat pattern, draping, and apparel product assembly. In such courses, there is often an emphasis on the fabric hand and drape as they relate to apparel design, fit, and assembly methods.

As depicted in Figure 6, several components of our general model are relevant to the apparel production subject matter area. Courses in this area emphasize professional decisions made by developers concerning the formal qualities ofproducts. In some texts, development decisions are addressed as they relate to the economic, legal, political, and technological aspects of the larger global context; here, offshore sourcing of raw materials or labor are discussed (e.g., Dickerson, 1995; Glock & Kunz, 1995). The gatekeeping function is also addressed in these courses; quality assurance personnel affect what is available for retail buyers and individual consumers to purchase. The primary emphasis of this subject matter area is on formal qualities. Textbook authors (e.g., Glock & Kunz, 1995) and educators have recently begun to emphasize the importance of developing formal qualities of the product that are consistent with the instrumental benefits and to a lesser extent, the aesthetic benefits derived by consumers of textile and apparel products. Durability, cost, and comfort are examples of instrumental benefits resulting from selection of various seam types, an aspect of apparel production. Sensual pleasure is the aesthetic benefit affected by apparel production methods. For instance, various seams or stitches might create puckered seams and bulkiness that negatively affect visual and tactile forms of sensual pleasure.

Functional Design. Students of functional design learn to create products that satisfy benefits sought by consumers

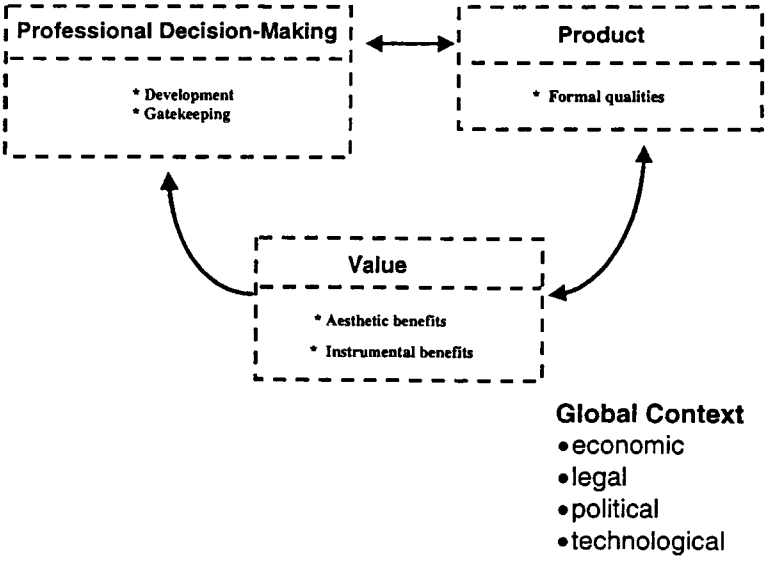

Figure 6. Model Components Relevant to Apparel Production Subject Matter

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with unique needs (e.g., children, elderly, recovering medical patients, athletes, etc.). Here, educators help students to develop products for consumers whose needs are not met by products available in the mainstream marketplace. Curricular content in this subject matter area often entails the development and evaluation of apparel and textile prototypes for industrial, medical, and athletic uses, with particular emphasis placed upon maximizing comfort, mobility, visibility, impact, and safety (Watkins, 1995). In addition to these largely instrumental benefits, educators include discussion of psychological comfort related to functional design. The wheelchair bound consumer likely seeks an appearance similar to that available in the mainstream market. Achieving such an appearance may hold symbolic meaning (e.g., consistency with socially-defined appearance norms) for the individual and may positively influence the individual's self-esteem and self-concept (Feather, 1991).

Curricular content in functional design is represented by several components of our model. As shown in Figure 7, functional design subject matter focuses upon the development of formal and symbolic qualities of products for consumers with particular individual differences to provide desired instrumental benefits (e.g., physical comfort, mobility, enhanced feelings of self-worth).

Appearance and Social Realities

Socio-Psychological Aspects of Clothing. Curricular content related to socio-psychological aspects of clothing typically draws from social science approaches to broaden students' understanding of clothing and appearance in contemporary society. Of particular interest here are two central issues: (a) how individuals use clothing and appearance cues as stimuli that help them to understand themselves and the world around them and (b) how socio-cultural influences affect individuals' decisions, interactions, and cognitive processes related to their clothing and appearance (Kaiser, 1990). Although these texts tend to emphasize the role of specific socio-cultural contexts in the shaping of meaning, they also explore larger global issues. Two texts discussed how certain textile and clothing products have moved from specific socio-cultural contexts, diffusing not only within but also across socio-cultural systems, becoming part of a larger fashion influence process of the "global village" (Kaiser, 1990, pp. 505, 515-518; Sproles & Burns, 1994). For instance, Sproles and Burns address how, during the mid-1980s, U.S. fashion was affected by media coverage of political upheaval in the Middle East (1994, pp. 56-57).

In addition to considering the expressive and symbolic roles of apparel products in everyday life, some educators have incorporated discussions of textile and apparel related environments into their curriculum. For instance, students might consider symbolic meanings and socio-cultural messages about appearance norms, standards, or ideals associated with formal qualities embedded in store displays or fashion advertisements. Further, a recent approach to the socio-psychology of clothing requires students to apply social science concepts to forecast upcoming fashion trends for specific consumer groups (personal communication, Mary Lynn Damhorst, November 1996).

The model representing socio-psychological aspects of clothing (Figure 8) includes most components from the more general model. Socio-psychological content explains ways that individuals manipulate the formal, expressive, and symbolic qualities of apparel products (or the physical self) to derive pleasure as well as emotional and psychological comfort. In addition, the symbolic meanings that consumers cre-

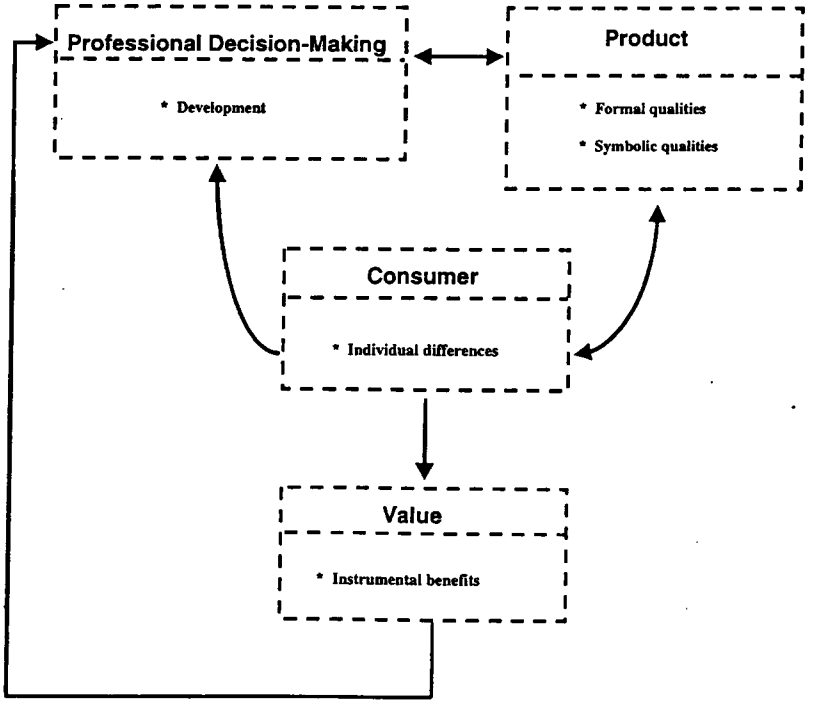

Figure 7. Model Components Relevant to Functional Design Subject Matter

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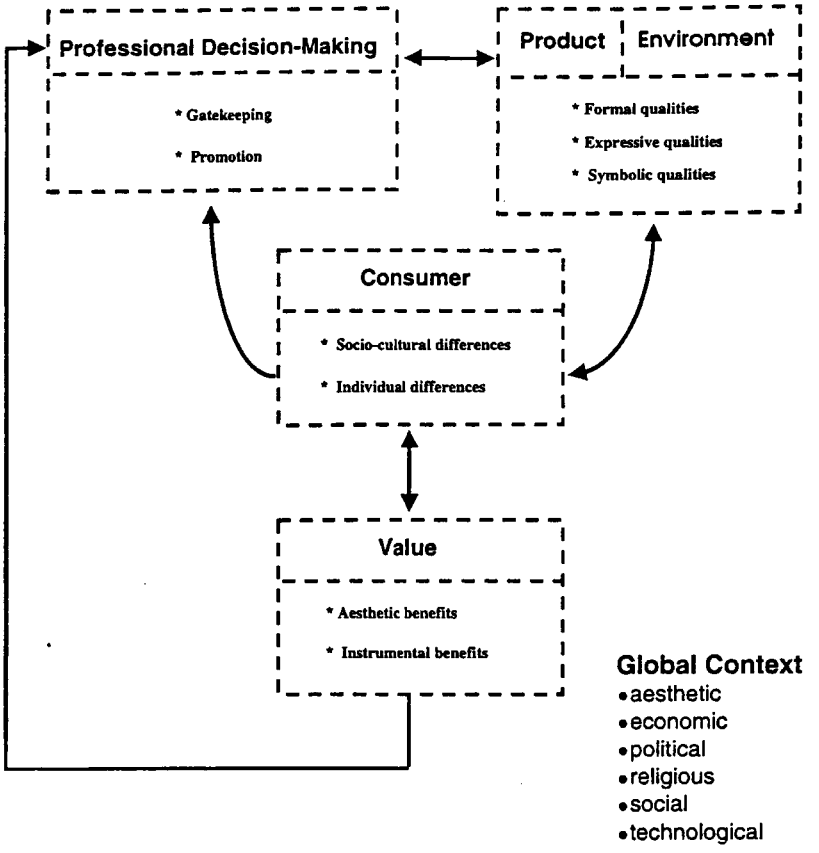

Figure 8. Model Components Relevant to Socio-Psychological Aspects of Clothing Subject Matter

ate for different textile and apparel products and environments are addressed, particularly as they are related to individual differences, socio-cultural differences, and varied aspects (e.g., aesthetic, economic, political, religious, social, and/or technological) of the larger, global context. Similarly, the aesthetic and instrumental benefits that a product or environment holds for an individual are considered in global and socio-cultural contexts and as they are related to individual differences among consumers. Finally, some educators discuss the role of gatekeeping and promotion in creation of the symbolic qualities individuals attribute to various fashion media or apparel environments (e.g., store displays). For instance, one might discuss how meaning associated with a brand name product is influenced by the store (image) in which it is sold and messages in advertisements.

History of Clothing and Cultural Aspects of Dress. Courses with content related to the history of clothing and the cultural aspects of dress help students to more fully comprehend the consumer as an individual and a social being immersed in a social, cultural, technological, economic, and political context that in part shapes the aesthetic and/or instrumental benefits (value) that he/she seeks in textile and apparel products. Students examine how groups of consumers in different geographic, temporal, and cultural contexts have used and modified products and environments to express themselves, to develop personal identity, and to lend meaning to their lives. In addition, in some texts, cross-cultural comparisons are made to highlight differences in dress in a given era but across varied global contexts (e.g., Tortora & Eubanks, 1998).

As indicated in Figure 9, educators in the historical and cultural subject matter areas place a primary emphasis upon the socio-cultural differences (as shaped by the aesthetic, economic, political, religious, social, and technological parameters of a given global context) and individual differences (as an artifact of socio-cultural context) that work to affect (a) the formal qualities of the product or environment sought, (b) the ways that an individual expresses him/herself through a textile or apparel product or in a textile environment, (c) the symbolic meanings that consumers create for different textile and apparel products, and (d) the aesthetic and/or instrumental benefit(s) that a product or environment holds for an individual.

Fashion Theory and Consumer Behavior. The fashion theory and consumer behavior subject matter areas are closely wedded. Both areas concern the consumer and his/her decision-making process; how and when do different individuals evaluate products? Consumer behavior courses typically focus upon consumers as problem-solvers and the process by which different consumers recognize needs or wants, survey their environments (e.g., in-store displays, advertisements, magazines, etc.) for product information, evaluate alternatives, and select products (Solomon, 1996). Fashion theory content is often embedded in consumer be-

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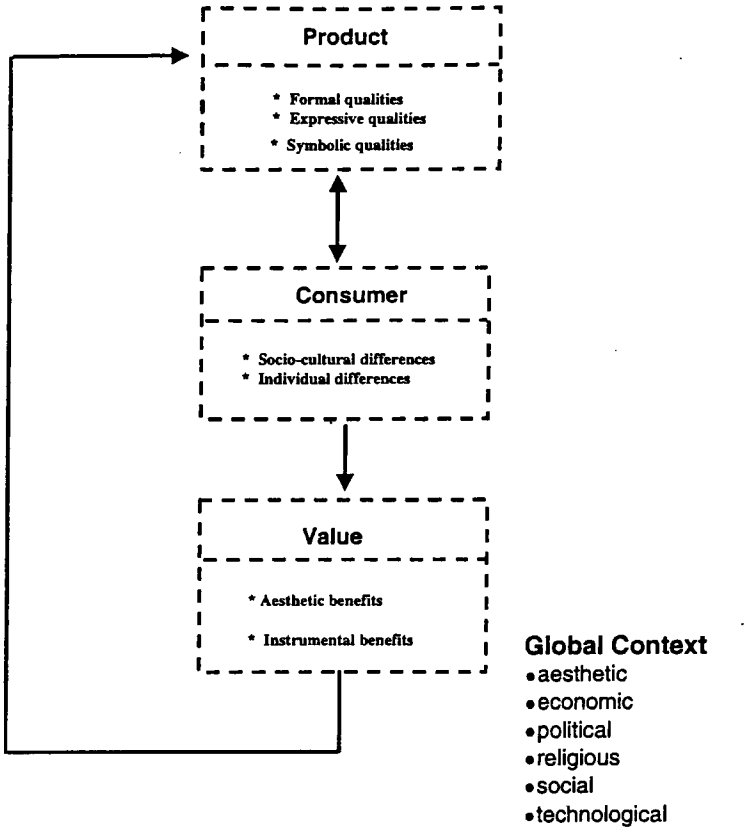

Figure 9. Model Components Relevant to History of Clothing and Cultural Aspects of Dress Subject Matter

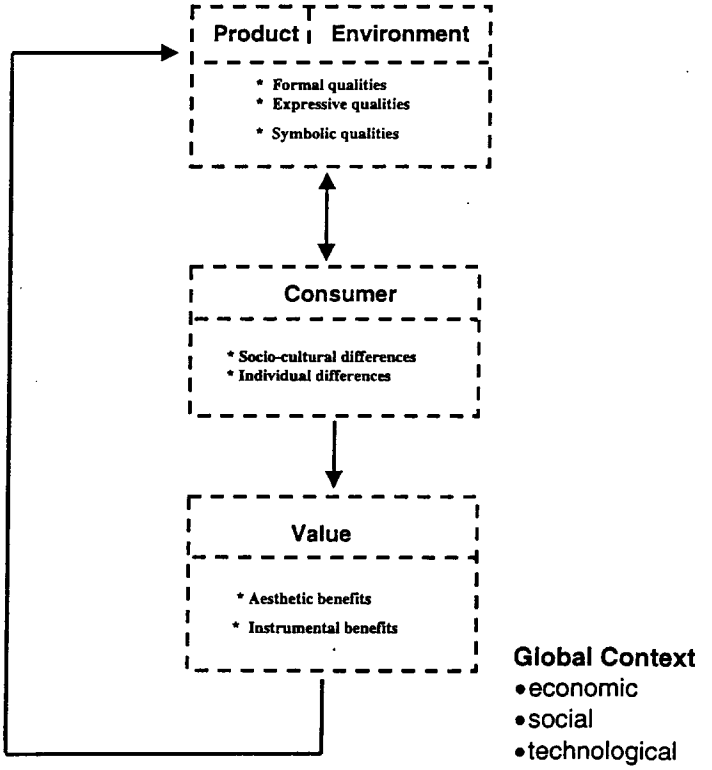

Figure 10. Model Components Relevant to Fashion Theory and Consumer Behavior Subject Matter

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havior courses and emphasizes (a) the time at which various groups adopt products and (b) the movement and adaptation of fashions among and within consumer groups. Content comprising these educational areas places primary emphasis upon the consumer and how individual differences and various socio-cultural influences affect individuals' product-related behaviors. For instance, students learn about differences among individuals in different product adopter categories (innovators, opinion leaders, early adopters, laggards, etc.) and consider differences in consumer behavior among individuals belonging to different social and cultural groups. Recent texts also have included content related to global consumer markets, which comprise consumers whose product or environment needs and desires transcend cultural boundaries (e.g., Engel, Blackwell, & Miniard, 1993).

Components of the general model that incorporate concepts germane to fashion theory and consumer behavior subject matter areas are illustrated in Figure 10. As depicted, consumer behavior and fashion theory content focuses upon how economic, social, and technological aspects of the larger global context, as well as socio-cultural and individual differences can affect individuals' behaviors toward products and environments and the aesthetic and/or instrumental benefits they seek to satisfy by consuming or experiencing textile or apparel products and environments. More specifically, students of these subject matter areas consider how the formal, expressive, and symbolic qualities of products and environments are interpreted by potential consumers with different (or similar, in the case of global marketing) characteristics and circumstances.

Relationship of the Taxonomy of Value to Core Subject Matter Areas

As indicated, taken together, work by Kaiser and Damhorst (1991) and Laughlin and Kean (1995) offers a state of the art analysis of textiles and clothing subject matter across the United States. Table 2 provides a visual overview of how the benefits or value components included in our taxonomy (see Figure 11) are related to the three areas of textiles and clothing curricula (Kaiser & Damhorst, 1991) and the expanded subject matter topics (seven core topics defined by Laughlin and Kean, 1995, as well as the three additional topics [italicized in Table 2]). Table 2 is based upon our interpretive analysis of subject matter content addressing benefits derived from textiles and clothing products and environments. We offer Table 2 as a working model; an individual educator's expertise, emphasis, or approach to teaching a subject matter area may vary, altering the components of value encompassed in a subject matter area.

As Table 2 shows, a combination of subject matter areas contribute to understanding each component of value. This justifies the use of this taxonomy as a structure to help integrate subject matter content. We will describe only a few of the value components found within Table 2.

Sensual Pleasure

For example, this figure shows that subject matter areas of beginning textiles, color and design principles, mer-

Table 2. Components of Value Embodied in Areas of TC Curricula and Expanded Subject Matter Topics

	Textile Product Evaluation		Textiles and Apparel Production/Distribution			Appearance/Social Realities				
Components of Value	BT	CDP	MO	*AP*	*FD*	SPA	HC	CA	FT	*CB*
Sensual Pleasure	X	X	X	X		X	X	X	X	X
Beauty		X	X			X	X	X	X	
Aroused Emotion		X	X				X			X
Creative Expression		X	X				X	X		
Identity		X	X			X	X	X	X	X
Alternative Existence		X	X			X		X		X
Cognitive Challenge			X			X				X
Physical Comfort	X	X	X	X	X	X	X	X		
Physical Protection/Safety	X		X	X	X					
Structural Quality	X		X	X					X	
Efficiency	X		X	X	X				X	X
Sexual Attractiveness			X				X	X		
Regulated Emotion		X				X				X
Reflected Emotion		X				X		X		
Spiritual Ecstasy							X	X		
Self-Acceptance			X		X	X	X			
Social Acceptance, Affiliation			X		X	X	X	X	X	
Status			X			X	X	X	X	
Spiritual Protection						X	X	X		
Quest for Knowledge			X							X

Note: X = component embodied in TC curricula. BT = beginning textiles. CDP = color and design principles. MO = merchandising operations. AP = apparel production. FD = functional design. SPA = socio-psychological aspects. HC = history of costume. CA = cultural aspects. FT = fashion theory. CB = consumer behavior. Italicized core subject matter areas were identified by the present researchers, not Laughlin and Kean (1995).

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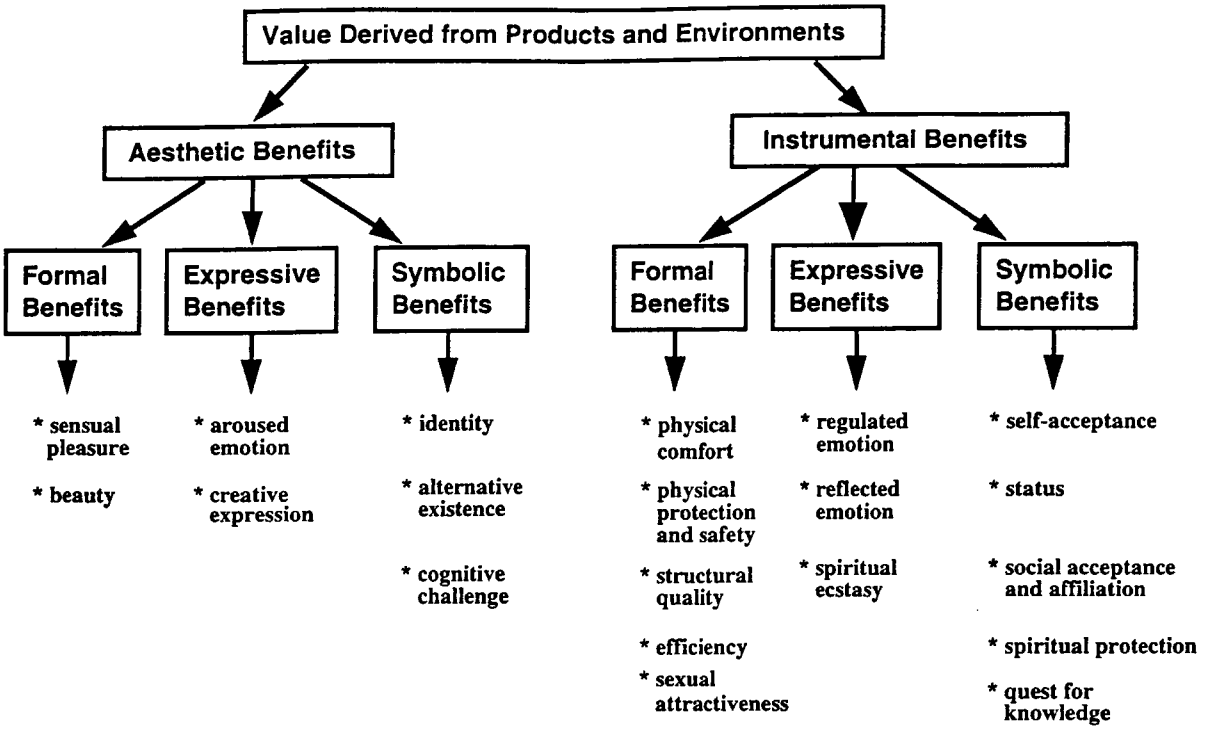

Figure 11. Taxonomy of Value Derived from Textile and Apparel Products and Environments

chandising operations, apparel production, socio-psychological aspects, history of costume, cultural aspects, fashion theory, and consumer behavior address sensual pleasure of the product or environment. As you may recall from Part One, formal qualities may provide pleasure to the senses. Levels of stimulation, novelty, complexity, and unity of the form help explain how sensory stimulation can lead to experienced pleasure (Fiore & Kimle, 1997). For instance, under textile product evaluation, beginning textiles addresses how sensual pleasure from the texture of the product is affected by fibers, yarns, fabrications, finishes, and care. Content in color and design principles provides terminology to describe sensual qualities and offers (practice using) principles affecting perceptions of sensual pleasure from the product or environment.

Under textiles and apparel production and distribution, merchandising operations discusses a number of factors that influence sensual pleasure for the consumer. Selection of merchandise assortments affects sensual pleasure offered by the combination of products on the selling floor. Buying and distribution decisions have an impact on the merchandise assortment that reaches the floor; having the right mix at the right time can affect sensual pleasure. For instance, the sensual qualities of a late shipment of pastel jeans that reaches the selling floor in the fall rather than the spring may be negatively evaluated. Promotion (e.g., displays, personal selling, or advertisements) also may emphasize the sensual qualities of the product or create pleasurable combinations of products. Store design, maintenance operations, and location further enhance the sensual pleasure of the environment offered to the consumer. Apparel production decisions regarding materials and production methods (e.g., seam type) affect the sensual qualities of the product. A large width seam could, for instance, detract from the delicate aesthetic of a sheer garment. The amount of style ease "flat patterned" or "draped" into the product can affect sensual pleasure as well.

The component appearance and social realities includes a number of subject matter areas that assist the student in understanding that perception of sensual pleasure is individual, time, and place dependent. Socio-psychological aspects and consumer behavior enlighten the student about the individual nature of perception and hedonic consumption. Sensory thresholds vary by individual, affecting what is consciously perceived and evaluated as pleasurable. Desire for hedonic (pleasurable) qualities differs by individual and by product. Consumer behavior addresses how products or environments can create sensual pleasure or enhance the qualities of the product. Fashion theory focuses on the role of novelty in creating sensual pleasure, which is particularly important for certain segments of consumers (e.g., innovators). History of costume and cultural aspects illustrate that the form perceived as pleasurable varies by time and place and that the form makes sense according to the historical or cultural context.

These subject matter areas provide the student with a better understanding of how to offer sensual pleasure to the consumer. That is, these curricular components address (a) how textile properties affect sensual pleasure; (b) how to describe, develop, or decipher products and environments that include principles affecting the pleasure; (c) how production and merchandising decisions may influence sensual pleasure; and (d) how these decisions are dependent upon the particular consumer or broader context.

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Efficiency

Efficiency is the ratio of outputs to inputs (Holbrook, 1994). Inputs include money, time, and effort. The efficiency of time and effort (both inputs) is convenience (an output) for the consumer. Beginning textiles, an element of textile product evaluation, introduces students to textile factors that affect efficiency, in the form of required care of the product. For instance, particular fibers or fabrications require costly dry cleaning or time-consuming hand-washing.

All three subject matter areas of textiles and apparel production and distribution contribute to the understanding of efficiency. For instance, merchandising operations introduces (a) pricing strategies resulting in varying perceptions of efficiency of money by consumers (e.g., a consumer's perception of the extent to which a product is a "good value" for the money), (b) assortment planning and inventory control strategies (e.g., use of electronic data interchange) to ensure that the customer will not be inconvenienced by out of stock items, and (c) promotional elements such as store design and point of purchase information from signage and staff to assist consumers in conveniently locating desired products and product information. Apparel production and functional design trains students to develop and analyze products that may make the life of the consumer more efficient. For example, selection of closures for products for children or for the physically challenged may affect the level of time and effort involved in end use of the product.

Fashion theory, under appearance and social realities, explains the role of efficiency in product obsolescence, desire for change, and adoption of new products. For instance, consumers are more conservative in the selection and disposal of items perceived to be expensive to them. Conservative styling, leading to slower product obsolescence, is favored by many consumers when cost is high. Some theories of consumer behavior outline stages of such a logical decision making process, reflecting the premise of consumers as efficiency minded problem-solvers.

These six subject matter areas provide the student with a better understanding of how to develop and select products and to create environments that promote efficiency for the consumer. These areas provide information about the contributions of textiles, product design, production methods, and merchandising decisions to products and environments that offer the consumer efficiency of time, money, or effort. The areas also address the influence of consumer demand and how consumers process information in satisfying this demand.

Strategies to Facilitate Integration of Subject Matter

We suggest the following strategies to implement the model and taxonomy as learning aids. Recurring orientation to the model and taxonomy, consistency of terminology, and critical thinking activities will strengthen the integration of textiles and clothing subject matter by students.

Pre-existing Structures for Integration of Information

Introducing the overarching macro-level model or a simplified version in a beginning level course can provide a schema to orient students of textiles and clothing. Students are exposed to vocabulary that will be used throughout their educational careers and are briefly introduced to the relationships among these key terms and the components of their professional field (Moore & Readence, 1984; Mealy & Nist, 1989). Our analyses of educational materials used in general, entry-level survey courses suggest that our model is an appropriate tool to use in this way. We found that the educational materials currently used in these entry-level, survey courses typically address subject matter content related to all components of our integrative model (see Diamond, 1993; Rath, Peterson, Greensley, & Gill, 1994; Stone, 1990). As such, our model complements an existing content structure that is reflected in instructional materials currently used by textiles and clothing educators.

In addition, instructors of other textiles and clothing courses may orient the student to course content by highlighting the components of the model defining the course, similar to information presented in Figures 3 through 10. This not only allows the student to see the metaphorical "forest through the trees" for that particular course, but also facilitates awareness of relationships and integration among courses, because each course is a select piece of the larger model. Further, repeatedly exposing the student to the overarching macro-level model continually underscores and reinforces for the student the integrative nature of the textiles and clothing field and the specific linkages among its components (Moore & Readence, 1984).

Similarly, introducing the taxonomy early in the student's education could foster pragmatic organization of information, within and among courses, relevant to specific benefits offered by the product or environment and the effect of professional decisions on these benefits. As the student progresses through his/her program of study, instructors may continually refer to this structure and the components within it, providing more elaboration and detail, and emphasizing the complex relationships involved in a variety of textiles and clothing issues. Instructors also may assist the student in realizing the importance of required courses from outside departments by showing their fundamental relationship to the model and taxonomy.

Despite the diverse disciplinary backgrounds of textiles and clothing instructors, one need not abandon one's rooted terminology in favor of another's for the sake of consistency across courses. Although it is imperative to have consistent terminology (not necessarily the terms we have proposed in our structures) across courses, instructors should not be constrained from connecting their vernacular to that of the overarching model and taxonomy as a means of offering consistent terminology across courses. The model and taxonomy form the base structures that are expanded by subject matter content.

Using consistent terminology across textiles and clothing courses should facilitate retrieval of relevant information from past courses, the first step in integration. Retrieval of pertinent information is easier when one is supplied with appropriate cues to the information (Graber, 1984). For instance, the student organizes and retrieves information related

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to sensual pleasure, identifying factors from a number of courses that contribute to or affect perceived sensual pleasure offered by the product or environment. Further, it has been argued that using classroom materials based upon students' existing vocabularies can help instructors to foster within their students critical thinking skills (Brookfield, 1987). As the student progresses through his/her program, terminology that is consistently and repeatedly used in the classroom will become integrated into this "existing" vocabulary.

Critical Thinking in the Classroom

As textiles and clothing educators, we believe that our responsibility to students is twofold. First, we must prepare students to be visionary, discerning, flexible, and cooperative players in the industry. Graduates of our programs must take with them a holistic understanding of the industry and how its parts work together to meet desired ends and to achieve sustainability. Second, we have an obligation to help our students develop skills, such as critical thinking and problem solving, that will serve them well in not only their professional pursuits, but also in their personal lives. In a recent survey of 143 college professors of textiles and clothing, the development of critical thinking skills was one of the most frequently mentioned competencies thought to be important for student success (Laughlin & Kean, 1995). Students must be equipped to adapt to changing economic and social structures in the industry and in their everyday lives.

Critical thinking has been addressed and defined by multiple education scholars. Among the most well known of these writers is Stephen Brookfield (1987). Brookfield has described critical thinking as being characterized by four qualities:

1. identifying and challenging assumptions,
2. recognizing the importance of context,
3. imagining and exploring alternatives, and
4. practicing reflective skepticism, or questioning claims of universal or ultimate truths.

Embedded in Brookfield's characterization of critical thinking is the belief that critical thinking is a process in which students learn to be open to new ideas, to call into question previous beliefs, to try new ways of thinking and to forge new meanings in doing so. Apps (1991) and Brookfield (1987) have offered suggestions for instructors trying to help their students develop critical thinking skills. Among their recommendations are activities such as case studies, debates, group discussions, role playing, and content analyses. Through such exercises, students learn to imagine and explore alternative perspectives and use creative and imaginative thinking to better understand these perspectives. In addition, Brookfield (1987) has noted that the best teachers of critical thinking are those who take on the perspectives of their students, developing classroom exercises that draw upon students' past experiences and existing vocabularies. Finally, critical thinking scholars have emphasized that instructors who teach critical thinking should model critical thinking behaviors in the classroom (Apps, 1991; Brookfield, 1987); Meyers (1986) has noted that "by modeling reflective thought in lectures and discussion, teachers can do much to encourage this frame of mind in their students" (p. 47).

The benefits gained by students who use graphic organizers are coincident with the hallmarks of critical thinking. As noted, graphic organizers help students (a) to integrate, organize, and synthesize ideas, (b) to see relationships among concepts, (c) to apply concepts, and (d) to generalize information from one context to another (see Griffin, Malone, & Kameenui, 1995; Mealy & Nist, 1989; Robinson & Kiewra, 1995). Indeed, each of these skills is important to processes associated with critical thinking and problem-solving. For instance, to consider the role of context (Brookfield, 1987), students must identify and synthesize information about relationships among contexts and outcomes associated with contexts. Similarly, to imagine or explore alternative explanations or solutions (Brookfield, 1987), students must integrate and apply pertinent knowledge or concepts to new situations, generalizing information from one context to another, new context. As such, the use of graphic organizers can foster within students cognitive skills central to the critical thinking process.

Thus, we suggest that the graphic organizers described in this paper and in part one—the integrative model and the taxonomy—be used in educational experiences designed to help students acquire and hone critical thinking and problem solving skills. These experiences should in some way involve students in decision making processes similar to those which they will face in the industry. Although not all of the educational materials analyzed for this study addressed professional decision making (e.g., the texts addressing fashion theory and consumer behavior), we believe that professional decision making should be a component of any textiles and clothing course. This is not to say that we endorse a myopic, vocational focus for higher education in textiles and clothing. Rather, we argue that the development of the higher order cognitive skills necessary for critical thinking and complex problem solving can be fostered via participation in activities focusing upon decision-making similar to that which our students will face as industry professionals.

For example, instructors might use a combination of role playing and case studies to immerse students within a simulated industry environment (Apps, 1991; Brookfield, 1987). Our model and taxonomy could be used as the springboard for such activities. Students may assume (i.e., "role play") various industry and consumer roles and work together to solve a problem outlined in a case study. To better understand the role of each industry and consumer player and the relationships among them, students could refer to our integrative model. Here, then, students would be required to (a) acknowledge the context of the textiles and clothing industry (as well as the contexts of its various component parts), (b) identify various challenges and the conflicting agendas, (c) recognize others' perspectives and needs, (d) explore alternatives to solve problems, and (e) practice negotiation skills. Or, in a related exercise, our taxonomy might be used to help students understand how diverse consumer needs and wants (i.e., benefits sought) can be met with a single product.

Findings regarding the outcomes associated with the use of critical thinking skills have been overwhelmingly positive. Critical thinking has been found to foster autonomous thinking (Chaffee, 1992; McPeck, 1990), creative imagination (Walters, 1990), and adaptability to frequent change

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(Halpern, 1993), skills that are important in today's rapidly changing and highly competitive job market (Halpern, 1993). Further, critical thinking has been said to help individuals to transcend biases and to evaluate situations and ideas objectively, while still remaining empathetic to others' beliefs and values (DeLong, Hegland, & Nelson, 1997). In sum, the development of critical thinking skills has been said to empower people to think for themselves and to take charge of their own learning (Apps, 1991).

Concluding Remarks

While educators demand that students integrate, educators sometimes stand entrenched in their area of expertise. We offer these working structures as a beginning for faculty to develop an integrative structure representing both aspects of the program and the larger textile and apparel industry. As we have stated, the terms proposed in our structures may need to be altered to reflect those commonly used within one's program. The important point remains that students can make connections due to consistent or associated terminology. Once the faculty agree upon the structure, the real work begins. The program should be examined for adequate coverage of the components of the integrative structure. Courses may be revamped, developed, or eliminated to better serve the student. However, one should remember that a course seldom addresses all aspects of the structure; a capstone course may be an exception. On a positive note, faculty might find that the integrative structure allows them to see new interrelationships among courses, leading to increased integration with the courses.

At this point we cannot demonstrate that these structures facilitate integration and professional development among students. This paper forwards the theoretical underpinnings and the beginning structures for faculty evaluation and implementation in their own programs. The next step is to test the theoretical contributions forwarded in our two part paper. We recommend examining perceptions and abilities to integrate subject matter among present textiles and clothing seniors (who have not been exposed to integrative graphic organizers) and comparing them to perceptions and abilities to integrate subject matter among future seniors (who will be exposed to integrative graphic organizers). This would help educators to determine if integrative graphic structures affect integration of subject matter content relevant to professional goals.

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