Material Selection and Evaluation of Supply Processes in Costume Design Applications: A Research on Fashion Design Students

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Abstract

The aim of this study is to determine whether the factors affecting the materials selection and supply processes of fashion design students in their costume design applications and the differences in the students' views on the selection and supply of materials used in their courses are different according to the types of schools. The population of the research consists of students studying at the undergraduate level in the Department of Fashion Design-Fashion and Textile Design-Textile and Fashion Design in Turkey and its sample consists of 368 students studying in the Departments of Fashion Design-Fashion and Textile Design-Textile and Fashion Design for the 2017-2018 academic year. The data of the measurement tool applied to the sample of the study was analyzed using the statistical package program "SPSS 25". The frequency and percentage values of the data were determined and the relationship between the type of school where the students received education and their views on material selection and supply was analyzed at $P<0.05$ significance level by applying t-test. According to the results of the research, the students who studied fashion design had different views on the choice and supply of materials according to the type of school they studied. It was determined that the students studying at the foundation university know where they can obtain the materials at the best price compared to the students studying at the state university and that they experience fewer problems with the supply of materials.

Keywords: Education, Materials, Fashion, Design, Textiles

Introduction

In the present century, fashion has become a rapidly changing and self-renewing concept, especially in the clothing sector. Through the written and visual mass media, it can easily reach to all segments and be applied by all segments (Gursoy, 2010:11). Because it is easily accessible compared to other areas, the effect of the fashion concept, which comes across as a concept intertwined with the clothing sector, can be seen in many areas ranging from accessories to electronic goods, vehicles and furniture (Atilgan, 2014:474). The clothing culture that symbolizes human communities has started to differ from past to present according to the living conditions of nations with different traditions, customs and beliefs. The lives, feelings and thoughts of people in society vary with the clothes they prefer to wear. This change also provided that people of different status within society were distinguished from each other by their clothes (Pamuk, 2002:10). Dressing, both in Turkey and in countries around the world, has now become a distinctive element that reveals the personalities of people. This perspective also brings out the importance of the concept of fashion. According to Simmel (2013:38) the concept of fashion "is a social form that combines the attractiveness of change with differentiation, with the attractiveness of similarity and harmony, often manifesting itself in classrooms for the purpose of expressing social differences". Fashion is not only an individual phenomenon; it can also be seen as a social norm. To put it in a general definition, fashion is a widely accepted style adopted by the masses in a certain period, but not every style is accepted as fashion. A style can be good or bad, beautiful or ugly; but it has to be adopted by the masses in order to be accepted as fashion (Mucuk, 2007:86). In this context, no matter how high quality the costume is produced, it will not be adopted by a large group of consumers unless it has the characteristic of being fashionable.

Clothes, far beyond being a basic necessity in an individual's life, perform numerous functions. Today, consumer culture has formed in clothing preferences, preferring branded clothing that provides status in social terms as well as being functional (Koca&Koc, 2016:235). The concept of fashion, which is identified with clothing, brings the concept of design with it. The interaction of these two concepts with each other is very important in terms of creating qualified products. The Turkish word *tasarim* (design) which is the form of sections of a structure drawn on paper, is derived from the root of "*tasar*" (to design) and *tasari* (draft) means the form in which what is intended or thought to be done is portrayed in the person's mind as a result of the design (Beyazıt, 2008:174). The word *"tasarlama" (designing)* which was etymologically derived from the Latin word "designare" in the 1540s, means "to choose, show or point". The act of designing as a verb can also express the meaning of creating, performing, formatting, or creating dependent on a plan

(Dervis, 2014:4). The design, which we see in almost every area, is also intertwined with textiles. From the structure of the textile material to its fabric, from its color to its pattern, all are the result of the design. Today, the clothing sector is constantly changing in terms of clothing designs, fabrics, colors, patterns and comfort of use. Advancing technology, high-paced living conditions and increased consumption have led to the emergence of innovative textile products (Basaran, 2012:9). Today, in order to meet the expectations of the consumer audience, which is becoming conscious with the development of technology, designers sink themselves in the effort of designing original, distinctive, creative and distinctive clothes (Koca,Koc&Cotuk, 2009:90).

The foundation of the fashion design process is constituted by the design phase. At this stage, the most important details of the emergence of a product, the design aesthetic and technical specifications are determined (Koca&Koc, 2009:34). The creation of design processes may show differences according to parties, expectations and applications. It is possible that individual and institutional expectations play a decisive role in how the stages will develop, with many different elements involved in the design process. Therefore, when talking about a design process, as much as the designer's creativity or imagination, the elements such as the reality in the concrete world, expectations, constraints, etc. must also be taken into consideration.

Although the subject of design refers to the existence of individual capacity, the acquisition of professional design skill and knowledge is through systematic and qualified education (Arslan, 2009:100). The most important matter for designers is that they receive education and the steps to be taken during this education. In the past years, individuals who were mostly involved in the sector through their own efforts have become more qualified individuals as a result of the support and knowledge they have received from educational institutions over time. At the same time, the products of these individuals have helped to increase the capacity of the sector in terms of implementation and, naturally, to achieve commercial success (Aygul & Ozudogru, 2014:37). The subject of fashion design education, which differs according to the content of the countries' education policies, is also being pursued through initiatives undertaken by the individual and private sectors. Allison and Hausman (2002) in their work "the Limits of Theory in Art Education", have addressed this issue in this context. They investigated the curricula related to art education in England and the United States and tried to determine how the political and economic changes in education are reflected in the curricula based on the results of the research. Along with these curriculum changes, it is thought that they will increase sustainability in the sector. Because, students will gain different points of view through the education they receive in schools, and will take on the role of guiding fashion. At this point, fashion design moves in

direct proportion to the presence or absence of the desire for individual development in this regard. Although there are many institutions that are willing to give fashion design education, at this point, the existence of individuals' tendency towards the subject has importance in terms of fashion design. In other words, although fashion design education is designed flawlessly, individual trends are important for fashion design.

In general, fashion design education is distributed as four groups within itself. The first of these are the courses that offer theoretical knowledge specific to the field and include design concepts. The second group offers theoretical and practical education preferences in technological terms. The third group includes teaching the basic elements and scope of design, as well as providing information about the presentation techniques of the ideas put forward. Finally, the fourth group is the most comprehensive application courses that require the use of the learned gains. Although these courses are often referred to as workshops or studio courses, as a result of the targeted education, it is aimed to give individuals the ability to design, plan, implement and, if any, produce solutions to potential problems (Varol, 2010:28). In fashion design education, it is examined that the quality, selection and procurement process of the materials used / to be used in education processes as well as their educational needs and financial dimensions are an important consideration. While the research process is the first stage of design, it involves processes such as selecting and supplying the materials to be used. Material selection and supply are of great importance for fashion design, which requires a manufacturing process. According to the Turkish Language Institution (TDK, 2017, Url-1) the material is "the whole of all kinds of information and resources used in the creation of the work". In other words, the material is defined as any material intended to achieve the creation of the design, the health and comfort of the people who use it (Eric, 2002: 12). Material, although important in many areas, is an important factor in the products to be manufactured. Sometimes objective and sometimes abstract materials help to complete the design. As an example, in graphic design, it can be shown that visual materials, i.e. abstract materials, stored in digital media rather than physical materials, are more important in transforming the design into a whole (Boztas, 2011:47).

Material knowledge is as important in the field of fashion design as in any other branch of art. The fact that almost all designers in all art branches have sufficient knowledge of materials directly affects the quality of the designs. This has led to the fact that, in terms of design processes, the material and knowledge of the material are seen as an important tool (Alp, 2009:51-52). The material, seen as the basic element of design, has a tradition intertwined with design and art in terms of hand-shaping. Clothes, which have been influenced and shaped by all forms of art over the past centuries, have

been presented to consumers in very different ways in terms of the use of raw and auxiliary materials. The fact that designers who are seen as the creators and practitioners of fashion have tendencies in relation to different disciplines, especially all areas of art, will contribute to national and international competition as well as to meet the conscious consumer demands that drive change (Koca&Koc, 2012:66).

Material is the most important element of detail starting from the design phase and continuing through the entire manufacturing process (Ficicioglu, 1996:1). As well as fabric, the main material in design, the selection and supply of auxiliary materials used in the fashion design field is a critical factor that enables the product to be attracted by the customers and affects the preferences of the customers. According to Bilen (2013:9), other than the main fabric, the auxiliary material in fashion design covers all complementary material used to create a piece of clothing. Materials are among the most important elements of the detail that starts from the design stage and continues throughout the manufacturing process. Success in fashion design is related to the suitability of fabric as a material to design, ease of processing, price, easy availability, quality, and time. The designer's skills in the fabric and materials allow him to draw the right direction in the process of creating the product (Jones, 2009:122). Along with changing fashion trends (tendencies), the material and auxiliary materials that are directly related to the appearance of the costume may differ according to season trends. Materials science is at the top of the factors that influence design in a concrete way and where it is possible to measure the degree of that effect. The increase in the variety of materials and accessories in the design process and the choice of the right material by the designer contribute positively to the outcome of the design. The important factors affecting the design quality during the design phase can be listed as the quality of the education the designer receives, the formation of awareness in this field, the branding process and the use of materials with the support provided by the state. The education provided in the field of design create areas where students can find the opportunity to explore their creativity and implement them depending on their culture. (Eristi& Akbulut, 2014:9).

In the fashion design education process, many different elements are included in the educational structure and it is aimed to make the fashion design education both qualified and appropriate to the current fashion conditions. Fashion design education, in this way, can offer a multifaceted perspective from the perspective of individuals who will become fashion designers in the future or who are currently working as fashion designers. In the aforesaid education process, material knowledge courses are of great importance for developing students' materials selection and fashion design skills. In the educational processes of fashion design, the material provides support to the

education of students about how a product can be made more attractive, valuable and striking and is an effective element for each designer to be able to produce different products of their own (Basaran&Sirin, 2013:93). The product intended to be realized by designers only becomes meaningful when it meets the right material. In short, the material course was born in workshops and then moved on to universities. Because of this, the concept of origin self-taught and educated has emerged. Various research has been conducted on the subject and McRobbie (1998)'s book "British Fashion Design Rag Trade or Image Industry?" has the characteristics of a research book. Interviews have been conducted with people who received education related to the sector and these interviews were analyzed. It was concluded that people who had received education related to the sector were being pushed in some sense by the self-taught class. The root cause of this can be cited as the reason that fashion began to grow in universities rather than workshops, where it was born.

In modern university design education, technology-indexed materials courses are given. Students focus on advancing technology rather than traditional craft (Lawson,1997). Although this results in positive results in the learning of new materials and production methods, it gradually leads to a decrease in the practical interaction of design students with materials. Designers need to learn materials by experimenting with them. In light of this information, it is concluded that a materials course in which students can interact with materials is important for industrial design education (Dervis, 2014:44). Considering the knowledge and skills of the students to recognize the material, it is known that the selection and supply of materials pose problems to the students from time to time. On the other hand, another of the important issues in fashion design education is the details related to the material (Yetmen, 2016:738). In other words, a training process that includes details about the materials may be of importance to the individuals receiving the training and may increase their level of compatibility with the materials.

Undoubtedly, many different elements are involved in the educational structure in the fashion design education process and on this opportunity, it is aimed to make fashion design education both qualified and appropriate to current fashion conditions. Fashion design education, in this way, can offer a multifaceted perspective from the perspective of individuals who will become fashion designers in the future or who are currently working as fashion designers. While emphasizing the use of materials in the design, which is of great importance in the aforesaid education process, it is possible to address it within the following factors (Arslan, 2009: 93-95):

- Individuals who receive education are informed about the material in detail, from production to consumption.

- Special educations are taken on how to choose and use materials not only in terms of products but also in the design phase.
- On the basis of fashion trends, how and to what extent the materials give direction to fashion designs are explained.
- The impact that the material has created, especially in terms of design processes, is examined and explained both in terms of fashion and finance.
- The information on which materials should be used in which design with how much intensity is conveyed.
- Information and guidance on the concepts of material efficiency and material sustainability are provided.
- The individuals receiving education are advised on their own material designs.
- Information on the compatibility of the material design process with technology is provided.

The main objective of this research is to determine the factors affecting the material selection and supply processes of fashion design students in their costume design practices and to determine whether there are differences between the types of students' schools in the selection and supply of the materials used in their courses. In the study, the selection and supply processes of the materials used in the applied courses students studying at undergraduate level in faculties teaching on fashion design were discussed. Considering the education students receive in their schools and the type of school they study, it was aimed to determine whether there are differences in the selection and supply of materials between state and foundation university students.

In this study, which aims to determine the views of the students in fashion design departments according to the types of schools they read about the selection and procurement processes of the materials used in the applied courses for the field, answers to the following questions were sought.

In practices of fashion design students during their courses;

- To what extent they know the channels to supply the materials they use?
- What are their views on the supply channels of the materials they use?
- Do their views on the selection and supply of the materials they use differ according to the type of school they attend?

2. Method

In this part of the study, model of the research, working group, data collection tools used in the research and the statistical methods used in the analysis of the data are explained.

2.1. Research Model

The study is a descriptive research based on the scanning model, which is one of the quantitative methods. Scanning models are a research approach that enables the description of a situation that either existed in the past or exists in the present as it is (Karasar, 2014: 77). In order to determine the views of the students who continue their education on the subject, a measurement tool was prepared and the views of the students were asked to determine the selection and supply of materials in the courses for application within the educational process.

2.2. Study Group

In Turkey, there are 29 faculties providing undergraduate education in Fashion Design/ Fashion and Textile Design/ Textile and Fashion Design in 14 provinces including foundation and state universities. In addition, there are associate degree programs in fashion design in 27 provinces, including foundation and state universities. In this study, associate degree students were excluded in the research and the research sample was constituted by 368 students studying in 4th grade in the Departments of Fashion Design/ Fashion and Textile Design / Textile and Fashion Design in the 2017-2018 academic year. The reason for the selection of 4^{th} grade students as a research population is that the students have received sufficient education in theoretical and practical courses related to the field. According to the table, the number of people who make up the population of the research is 3000-5000 and the sample of the research is 341-357 people who are selected from the population. The distribution of the students according to the demographic characteristics of the study is also given in Table 1.

Table 1. Demographics of the students participated in the study

		n	%
Age	20 years of age and younger	79	21.5
	Between 20-30 years of age	279	75.8
	30 years of age and older	10	2.7
	Total	**368**	**100**
Sex	Female	321	87.2
	Male	47	12.8
	Total	**368**	**100**
Type of School	State university	243	66
	Foundation university	125	34
	Total	**368**	**100**
Income Status	Below minimum wage	219	59.5
	Minimum wage	78	21.2
	Minimum wage and two times more	25	6.8
	Two-four times more of minimum wage	10	2.7
	Four or more times more of minimum wage	5	1.4
	Other	31	8.4
	Total	**368**	**100**

n: 368

When Table 1 was examined, it was determined that 21.5% of the 368 students who made up the research sample were 20 years of age or younger, 75.8% were between 20-30 years of age, 2.7% were between 30 years of age or over, 87.2% were female, 12.8% were male, 66% were state university students and 34% were foundation university students. It was determined that 59.5% of students were on the minimum wage and below, 21.2% had the minimum wage, 6.8% had the minimum wage and two times, 2.7% had twice - four times the minimum wage, 1.4% had four times the minimum wage and 8.4% had the other income group.

2.3. Data Collection Tool

The research data was collected by a three-part measurement tool prepared by the researchers. The first part of the measurement tool contains questions about the demographics of the students. In the second part, there are 16 5-point Likert type questions prepared to measure views on material selection and supply. In the third part, there are 9 3-point Likert type questions prepared to measure the views on the material supply channel. For the reliability of the prepared measuring instrument, pilot applications were carried out on 35 students who were randomly reached from different universities. The data obtained as a result of the application were examined using Cronbach Alpha (α) coefficient and the overall reliability of the study

was found to be α=0.95. The obtained result indicates that the measuring instrument has high reliability. The measurement tool was applied to 4th grade students during the spring semester of 2017-2018 academic year between 06.05.2018 and 31.05.2018.

2.4. Data Analysis

The quantitative data of the scale applied to the sample of the research was analyzed using the statistical package program (SPSS 25). SPSS is a package program commonly used by social science researchers in the analysis of data collected using various data collection tools or techniques (Buyukozturk, 2010: 9). By finding the frequency and percentage values of the data, arithmetic averages and standard deviations were calculated and the relations of the questions with each other were established. As a result of both explanatory factor analysis and confirmatory factor analysis, the reliability of common factor structures was also examined. Reliability analysis has been applied to finalized factor structures. As a measure of reliability, the Cronbach Alpha statistic has been employed. The question of whether the substances in the scales are necessary or not, in other words, whether they are a substance that distorts the scale, is decided by taking a look at all correlations. In addition, Principle Component Analysis was used as a method. While Principle Component Analysis is a method used when there are too many variables, it is also a method that allows the variables to be explained in a smaller number and independent of each other (Togrul, 2018:31). For the adequacy of sample size, the Kaiser-Mayer Olkin statistic was looked at. The obtained findings were interpreted within the questions contained in the sub-problems prepared in accordance with the purpose of the research. The frequency and percentage values of the data were determined and the relationship between the type of school in which the students received education and their views on material selection and supply was analyzed at $P<0.05$ significance level by applying t-test. Buyukozturk (2010:39) defined T-test as "The T-test is used to test whether the difference between the averages of two independent groups or samples is at a significant confidence level"

3. Findings and Interpretation

In this part, the findings and statistical interpretations of the data obtained by means of the measurement tool are explained in the research, which was conducted with the aim of determining the views of the undergraduate students in fashion design departments regarding the selection and supply processes of the materials they use in applied courses for the field.

3.1 To what extent students who are studying fashion design know the channels to supply the materials they use in the applications they make in their classes?

When the curriculum of the faculties of Fashion Design/ Fashion and Textile Design/ Textile and Fashion Design education of universities throughout Turkey are examined, the curricula of state universities were found to consist mainly of applied courses such as "Collection Preparation", "Costume Design", "Experimental Clothing Design", "Ornamentation Techniques". Along with all these application courses, although the theoretical courses "Material Knowledge", "Textile Surfaces and Material Knowledge", "Material Technology" and "Fabric Structure Knowledge" are lectured in many faculties, there are also faculties that do not have these courses in their curriculum.

In Table 2, it was tested whether the knowledge of material supply channels of the students participating in the research differed in terms of state and foundation university students.

Table 2. The knowledge of material supply channels of the students participating in the research

Type of School	Expressions						x^2	p
	Yes		No		Partially			
	f	%	f	%	f	%	25.82	0.000*
Foundation	91	72.8 %	0	0%	34	27.2 %		
State	117	48.1 %	23	9.5%	103	42.4 %		
Total	208	56.5 %	23	6.3%	137	37.2 %		

**** significant at P<0.05 level***
Foundation University n: 125, State University n: 243

In Table 2, the students who participated in the study were asked "Do you know where to provide the materials you will use in your field studies?" and it was analyzed whether they differ in terms of foundation and state university students. It was seen that 56.5% of the students included in the survey sample answered yes, 6.3% answered No, and 37.2% answered partially.

When the answers given by the students who participated in the research are evaluated according to the type of school they studied, it is observed that 72.8% of the students who studied at the foundation university answered yes and 27.2% answered partially. There were no students answered

"no" from foundation universities. When the answers given by the State University students are evaluated, it is seen that 48.1% answered yes, 9.5% answered No and 42.4% answered partially. It was concluded that students who were included in the research sample and who received education at the foundation university were more familiar with material supply channels than students who received education at state universities. A statistically significant difference between foundation and State University students ($x2 = 25.82$, $p = 0.000$) was observed from the results of the chi square test.

In Table 3, it was examined whether the students involved in the study had problems in obtaining materials differed from the state and foundation university students.

Table 3. Table of material supply problems related to the students participating in the study

School Type	**Expressions**										**x^2**	**p**
	I don't experience problems		**Minimum Level**		**Moderate Level**		**High Level**		**Excessive Level**			
	f	%	f	%	f	%	f	%	f	%	106.516	0.000*
Foundation	40	32%	45	36%	34	27.2 %	5	4%	1	0.8%		
State	18	7.4%	31	12.8 %	64	26.3 %	77	31.7 %	53	21.8 %		
Total	58	15.8 %	76	20.7 %	98	26.6 %	82	22.3 %	54	14.7 %		

**** significant at P<0.05 level***
Foundation University n: 125, State University n: 243

When Table 3 was examined, according to the total score averages of the answers given to the question "Do you have problems with the supply of materials?", 15.8% of the participants stated that they did not experience any problems with the supply of materials. In addition, 20.7% stated they had problems at minimum level, 26.6% at a moderate level, 22.3% at a high level and 14.7% at an excessive level. When the results in Table 3 are taken into consideration in terms of foundation and state universities, it is observed that 32% of the participants received education at foundation university had no problems, 36% had minimum level, 27.2% had moderate level, 4% had a high level and 0.8% had excessive level of problems supplying advanced materials. It was also revealed that 32% of the students receiving education at foundation university had problems sn supplying materials at moderate and high levels. It was also observed that 7.4% of the participants who received education at state university did not experience any problems, 12.8% had minimum level problems, 26.3% had moderate level problems, 31.7% had high level problems

and 21.8% had excessive level problems. It was found that 79.8% percent of the students studying at the state university had problems sat supplying materials at moderate and high levels. A statistically significant difference between foundation and state university students ($x2 = 106.516$, $p = 0.000$) was observed from the results of the chi square test.

3.2. What are the views of the students studying fashion design on the channels of supplying the materials they use in the applications they make in their classes?

Table 4. Students' views and distributions related to material supply channels

Material Supply Channels	Yes		No		Sometimes	
	n	%	n	%	n	%
From the shopkeepers in the area	203	**55.2**	43	11.7	122	33.2
From the internet	107	29.1	148	40.2	113	30.7
From the school	84	22.8	145	39.4	139	37.8
From the materials I have in my possession	201	**54.6**	35	9.5	132	35.9
I produce it myself (accessories etc.)	113	30.7	100	27.2	155	42.1
From my friends and relatives	130	35.3	80	21.7	158	42.9
By recycling unused products	114	31	103	28	151	41
Having manufacturing shops make it	67	18.2	211	**57.3**	90	24.5
From local bazaars	167	**45.4**	94	25.5	107	29.1

n: 368

The views of the students on the supply channels of the materials they need to use in their designs were examined. While 55.2% of the students supplied the material necessary for their design from the shopkeepers in the area, while 33.2% stated that they sometimes went to supply materials from the shopkeepers in the area. 11.7% stated that they did not supply the necessary materials from the shopkeepers in the area. Results are also given in Table 4.

When we look at the students who prefer to supply materials through the Internet, 29.1% said yes and 30.7% said that they sometimes supply materials through the internet. It is observed that 40.2% of students indicate that they do not prefer the internet channel when supplying materials. 22% of the students responded that they were sometimes supplying material from the school, while 37.8% responded that they were sometimes supplying material from the school, and 39.4% of the students stated that they were not supplying the material they needed from the school. While 54.6% of students used the material they needed in their design from the materials they had, while 35.9%

stated that they sometimes preferred to use the materials they had. 9.5% stated that they did not use the materials they already had in their designs. 30.7% of students say that they produce the accessories and materials they need, while 42.1% of students say that they sometimes produce them themselves. In addition, 27.2% of the students stated that they do not produce accessories or materials, etc. themselves. While 35.3% of the students provided materials through their friends and relatives, 42.9% said sometimes and 21.7% answered no.

The proportion of students recycling unused products was 31%, while 41% of students gave the answer sometimes. It was found that 28% of students did not recycle unused products. In case they cannot find the materials they need in their designs, 18.2% of the students have factories produce them and 24.5% of the students said that they sometimes prefer this channel. 57.3% of students stated that they did not supply materials by having them produced in factories. 45.4% of students prefer the local bazaars which is the preferred supply channel, while 29.1% of students prefer it sometimes. In addition, 25.5% of students stated that they did not use the local bazaars for supplies.

3.3. Do the views of the students who are studying fashion design regarding the selection and supply of the materials they use differ according to the type of school?

Table 5. Research variables and normality test

	Mean	Standard deviation	Kolmogorov-Smirnov			Skew	Flatness
			Statistic	df	Sig.		
Views on material selection and supply	3.9511	0.81704	0.183	368	0	-1.498	2.52

n:368

According to Table 5, the differences between the problem levels encountered by the students in the selection and supply of materials in the applications for costume design according to their various characteristics were also examined. First, each scale is summed up within themselves and divided by the number of items. The total scores are divided by the number of items and the score values are compressed between 1 and 5. Thus, the approximation to the scales and the approximation to the mean values would be the same. Whether average scores show primarily normal distribution was examined by the Kolmogorov-Smirnov normality test and it was determined that not all dimensions show normal distribution. All variables were skewed to the left relative to normal distribution and more pointed than normal. As variables do not show normal distribution, differences between averages will be investigated by nonparametric statistical methods.

Factor analysis for measurement tool

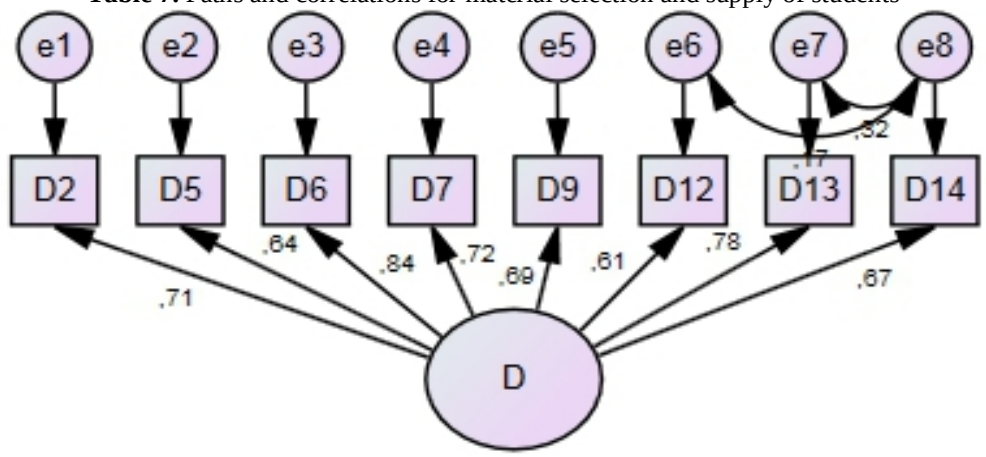
Table 6. Feedback scale factor analysis for material selection and supply, and reliability analysis statistics

	Items/Phrases	Extraction	FD	$\overline{X}$
D4	It's important to me that the material that suits my designs is in line with my budget.	0.538	0.734	4.05
D5	The instructor of the course will be effective in choosing materials in practical courses related to design.	0.47	0.686	3.72
D6	Material selection is an important element in terms of the originality of my designs.	0.704	0.839	4.08
D7	Easily accessible material suitable to the design is effective in bringing creativity to the fore.	0.552	0.743	3.92
D9	The quality of the selected material is an important factor in the process of product creation.	0.55	0.742	3.88
D12	To get to know the material, it is important to follow the developments in technical excursions, fairs and industry.	0.484	0.696	3.92
D13	It is important that educational institutions have archives related to the material.	0.697	0.835	4.07
D14	It is necessary to establish educational museums that include applications for material production.	0.575	0.759	3.98
	Eigenvalues			4.571
	Variance definition rate (%)			57.134
	Cumulative variance definition rate (%)			57.134
	Cronbach Alpha value			0.891
	Scale Average			3.951
	Hotellig T Square=58.432, F=8.211 P=0.0001			
	KMO = 0.912 Barlett's Test of Sphericity =1402.823 P=0.0001			

According to Table 6, the common factor structures of the statements on the scale of opinions on material selection and supply were examined. As a result of the analysis, the statements included in the scale were collected in a single factor after the Extraction value was below 0.40 and the substances that were not significantly loaded were removed from the analysis. In the analysis, basic components analysis was used as the method. To see the substances highly associated with the factors themselves and to see the explicable factor structures, the Varimax rotation method was used. For sample adequacy, the Kaiser-Mayer Olkin statistic was employed and the statistic was found 0.912. Therefore, the scale-oriented data set has a sufficient sample volume for factor analysis. Whether the correlation matrix is a unit matrix in obtaining common factor structures was examined by The Bartlett Globality Test and the Chi-Square value calculated for the significance of the Bartlett test statistic was calculated at 1402.823 and found to be statistically

significant (P=0.0001). Therefore, the correlation matrix is not a unit matrix. The analysis determined a single factor with an eigenvalue greater than 1, describing 57.134% of the total variance. The Cronbach Alpha value calculated for the reliability coefficient of the 8-item factor was calculated as 0.891. The scale was determined to have a high level of reliability. The scale will be used in community surveys and the creation of scientific judgments related to the field of review. The average of the scale was calculated as 3.951±1.176. On the scale, there was no item with a negative correlation in all correlations. The necessity of the questions contained in the scale was investigated with Hotelling t square. According to the Hotelling t square, the questions on the scale were prepared by the students to give similar results and in other words, the substances/expressions were determined to measure different characteristics of the students and it was decided that they were necessary for the scale.

Table 7. Paths and correlations for material selection and supply of students



* The letters in the round represent the sections in the measuring tool (d: opinions on material selection and supply). ** The letters and numbers in the rectangular shapes indicate the expressions in the section (D7: D Section 7. Expression.)*** the "e" in the round shape refers to the error value.

According to Table 7, whether a defined and restricted structure was verified as a model for the statements on the scale of the students' views on the choice and supply of materials in the design was tested with CFA. The structure validity of scales with CFA has also been studied. Some of the compliance measures obtained by confirmatory factor analysis were obtained as $\chi 2$=49.483; d.f.=18; $\chi 2$/df=2.749, RMSEA=0.069, NFI=0.965, CFI=0.977, IFI=0.977, RFI=0.946, GFI=0.968, SRMR= 0.036. When we look at the cohesion measures, the alignment values indicate that the validator model is acceptable. The Z statistics between the variables observed in the model and the hidden variables were examined and all paths were found to be significant. The minimum Z value was calculated as 10.975>1.96.

Table 8. Arithmetic mean standard deviation and independent t-test results of the distribution of students' views on material selection and supply according to the type of school in which the students received education

Expressions	**Type of School**	$\overline{X}$	**Standard deviation**	**t**	**p**
It's important to me that the material that suits my designs is in line with my budget.	State	4.1760	.97604	1.638	0.102
	Foundation	3.9794	1.14433	1.723	0.086
The instructor of the course will be effective in choosing materials in practical courses related to design.	**State**	**3.9200**	**1.02862**	**2.587**	**0.010***
	Foundation	**3.6132**	**1.10154**	**2.645**	**0.009***
Material selection is an important element in terms of the originality of my designs	State	4.2000	.99190	1.633	0.103
	Foundation	4.0123	1.06980	1.673	0.095
Easily accessible material suitable to the design is effective in bringing creativity to the fore.	State	3.9360	1.13410	.152	0.880
	Foundation	3.9177	1.07633	.149	0.882
The quality of the selected material is an important factor in the process of product creation	**State**	**4.1040**	**.99858**	**2.840**	**0.005***
	Foundation	**3.7572**	**1.16185**	**2.981**	**0.003***
To get to know the material, it is important to follow the developments in technical excursions, fairs and industry.	**State**	**4.0960**	**.91954**	**2.227**	**0.027***
	Foundation	**3.8313**	**1.15365**	**2.393**	**0.017***
It is important that educational institutions have archives related to the material.	State	**4.2320**	**.98485**	**2.077**	**0.039***
	Foundation	**3.9918**	**1.08328**	**2.141**	**0.033***
It is necessary to establish educational museums that include applications for material production.	State	4.1120	.92646	1.722	0.086
	Foundation	3.9053	1.16566	1.851	.065

*** significant at P<0.05 level**
Foundation University n: 125, State University n: 243

The distribution of the views on material selection and supply in Table 8 according to the type of school in which the students are educated was analyzed by t-test. According to the obtained results, the students who

responded to the items in the table differed according to the type of university they studied (state-foundation) ($p<0,05$).

According to the responses given in the statement “the instructor of the course will be effective in choosing materials in the applied courses related to design", students studying at state university (x=3.92) think that compared to students studying at foundation university (X=3.61), the lecturers of the course provide information and guidance on the materials that the students will use in their studies. According to Torrance (1968), the nature of the student-teacher relationship in terms of creativity is rich, exciting, encouraging, providing the necessary signs in scientifically researching problems (Tezci&Gurol, 2003:52). In this context, it can be said that the faculty members working at the foundation university should give the student the necessary support in selecting and supplying the materials that are the basic elements of the production process.

It is important to evaluate the textile materials in terms of quality and conformity before the production process. The perception of fabric quality characteristics can vary from person to person, and even the concept of quality is influenced by factors such as climatic conditions and cultural structure (Luible et al.). In his study, Jones (2009:122) stated that choosing the right fabric is a prerequisite for successful design and that the quality of the fabric is important for the success of the design as well as choosing the right fabric.

When the responses to the statement “the quality of the selected material is an important factor in the process of product creation " are examined, students studying at the state university (X=4.10) are seen to attach more importance on the quality of the material than students studying at the foundation university (X=3.75).

In the statement “it is important to follow the developments in the technical field trip, fair and sector in order to recognize the material", it is observed that state university students (X=4.09) think more positively than foundation university students (X=3.83), in addition, in the statement “it is important to have archives related to materials in educational institutions”, it is observed that state university students (X=4.23) think more positively than foundation university students (x=3.99).

In the departments for vocational education, particularly technical trips and fair visits are a complementary part of the education. According to the responses given by the students, it is seen that the state university students are more willing to be aware of material developments and innovations and it may be thought that the state universities need more material archives to be located in educational institutions.

4. Result

The interactions of fashion and design concepts with each other are extremely important in terms of the emergence of qualified products. Fashion is therefore an important part of textile production, even an independent element on its own. However, design plays an active role in the formation of fashion. Design fulfils its role by changing the direction of fashion and the shape of products, determining its position in social interaction with its level of appreciation. The subject of design often refers to the existence of individual capacity. In addition to the individual capacity, the acquisition of professional design skill and knowledge is through regular and qualified education. This is also valid for the fashion field.

The differences between countries in general education also bring about differences in fashion design education. In addition to educational institutions, fashion education is also tried to be maintained through initiatives carried out by individual and private sectors. Although there are initiatives by individual and private sectors regarding fashion education, the number of educational institutions is still not at the desired level. This leads to insufficient fashion design practices.

Fashion design education is primarily focused on the development of fashion in a more professional and rational framework. At this point, fashion design moves in direct proportion to the presence or absence of the desire for individual development in this regard. Although there are various institutions that are willing to give fashion design education, the existence of individuals' tendencies on the subject at this point is important for fashion design. In other words, although fashion design education is flawlessly designed, individual trends are important for fashion design.

Although fashion, design and education interact in a qualified way during the time they come together, the presence, quality and quantity of materials in the training processes also affect the quality of the education. At the same time, although there are many different fashion design education institutions worldwide, the problems, deficiencies and inadequacies of the educational materials they provide to their students may adversely affect the sustainability of the education and the willingness of the students to participate. For this reason, rather than designing the content of fashion design education, the issue that needs to be brought to the fore is to make the material provision qualified in the training processes. It is known that students studying in the undergraduate departments of fashion under the Faculty of Fine Arts / Faculty of Art and Design need a variety of materials within the scope of the application courses. The supply of materials in these departments is realized both with the individual budgets of the students and with the support of the faculties. Students face a variety of challenges in the supply of these materials with their student budget.

This study was conducted to establish students' views on material selection and supply and to create various recommendations. The study was prepared by quantitative method and the data was analyzed by IBM SPSS Statistics 25 program. When the results of the analysis were evaluated, differences were determined between the types of schools the participants studied and their views on the choice and supply of materials.

When the students' responses to the question about the state of knowledge of supply channels are examined, it is observed that 56.5% of the students answered yes, 6.3% answered no, and 37.2% answered partially. It was concluded that the majority of students knew the supply channel. When the students' knowledge of the supply channel is evaluated according to the type of school they are studying, it is observed that 72.8% of the students educated at foundation university answered yes and 27.2% answered partially. There were no participants from the foundation university students who answered no. When the answers given by the state university students are evaluated, it is seen that 48.1% answered yes, 9.5% answered no and 42.4% answered partially. It was concluded that students who were included in the research sample and who were educated at foundation university were more familiar with material supply channels than students who were studying at state universities. For this result, it can be said that all foundation universities are established in large cities and are closer to suppliers in terms of material supply than in other cities in Anatolia.

According to the answers given to the question of whether the students had problems with material supply, 15.8% of the participating students stated that they had no problems with material supply, while 20.7% stated that they had problems at minimum level, 26.6% at moderate level, 22.3% at high level, and 14.7% stated that they had problems at excessive level. In addition, when the results are treated as foundation and state university, it is observed that 32% of the students studying at foundation university did not have problems and 0.8% responded that they had problems supplying advanced materials. It was found that 32% of foundation university students had problems supplying materials at moderate and high levels. It is observed that 7.4% of the respondents who studied at the State University did not have problems and 21.8% responded that they had excessive level problems. It was found that 79.8% of the students studying at state university had problems supplying materials at moderate and high levels. According to the obtained results, it is observed that state university students have much more problems in the supply of materials than foundation university students.

When the views of the students involved in the research regarding the material supply channel were evaluated, it was found that the most preferred supply channels by the students were regional shopkeepers. The shopkeepers are followed by students who make use of the materials they have and prefer

the local bazaars. In addition, the supply channel that the students least preferred was the factories. The answer to the factory was followed by the internet channel and the materials obtained from the school.

When the answers to the question "the instructor of the course is effective in choosing materials in applied courses for design" were examined, it was concluded that the students studying at the State University received sufficient information and support from the lecturers of the course compared to the students studying at the foundation university. However, although students studying at the State University are in the area far from the material supply channels, they may not have trouble choosing the supply channels or producing the materials they need by using different methods in the city where they are located in proportion to getting sufficient information and support from the lecturers.

When the responses to other statements were examined, it was determined that there was a significant difference between the views of state and foundation university students regarding the choice and supply of materials. State University students are more likely than foundation university students to think that the quality of the selected material is an important factor in the process of product creation. In addition, according to the State University students, it is important for students to have technical trips, fairs and follow the developments in the sector in order to recognize the material and to have archives related to the material in educational institutions.

When all the results were evaluated, it was determined that the choice and supply of materials was important in the sections on fashion, which is applied science, and that the students had different views according to the types of schools. Accordingly, it can be said that students studying in public universities are more conscious and cautious about the choice and supply of materials.

Recommendations

In line with the information obtained in this research, some relevant recommendations have been developed for the more comprehensive and useful material knowledge education to the students who are studying fashion design.

- Course contents and hours for material knowledge can be increased in schools.
- Projects that can collaborate between schools can be developed through the supply channels through which material can be supplied.
- With the support of Information Technologies, suppliers and students can be brought together on school automation systems and the choice of materials that students want to provide can be ensured under the supervision of the faculty members.

- In the material information course, which is mostly in the theoretical field, the student can recognize the material by touching it personally with the supply of the materials in the subject content by the schools.
- Technical trips carried out on demand by lecturers can be put into the curriculum in order for students to get to know the materials more closely.
- The ways in which students can produce the material themselves can be transferred by the lecturers. Information on the existence of various alternatives can also be transferred to the course content.
- Manufacturers can be provided to provide waste materials to teaching institutions on fashion free of charge and to encourage education. At this point, these institutions can be supported by student internships.

References:

1. Alp, K. O. (2009). *Uygulamali Sanatlar Egitiminde Tasarim, Yapi, Islev, Estetik Ve Algi Sorunu,* Yuzuncu Yıl University Journal of Faculty of Education, Vol: 6, No: 1, p. 48-59.
2. Allison, B. & Hausman, J. (2002, December 16). *The Limits of Theory in Art Education*. Journal of Art & Design Education, p. 121-127.
3. Arslan, K. (2009). *Moda Tasarimi*. MUSIAD Research Report: Istanbul.
4. Atilgan, D. K. (2014). Giysi Tasariminda Esinlenmenin ve Arastirmanin Yaraticiliga Etkisi. *The Journal of Academic Social Science Studies,* (27), 461-477.
5. Aygul, Z. ve Ozdogru, S. (2014). Moda Tasarimcisi Olmak: "Yeni Mezun Moda Tasarimcilari Uzerine Soylemsel Bir Arastirma". *Mediterranean Journal of Humanities,* 4(2), 35-49.
6. Basaran, B. (2012). *Yuksek Ogretim Lisans Duzeyi Moda ve Tekstil Tasarimi Programinda Gorsel Sanatlar Egitiminin Yeri,* (Master Thesis), Necmettin Erbakan University Institute of Educational Science: Konya.
7. Basaran, B. & Sirin, N. (2013). *Moda ve Tekstil Tasarimi Ogretim Programinda Gorsel Sanatlar Egitimi*. İdil Journal, Vol: 2, No: 6, p. 71-99.
8. Beyazit, N. (2008). *Tasarimi Anlamak* (1.st Edition). Istanbul: Ideal Culture Publishing.
9. Boztas, E. (2011). Grafik Tasarim Egitimi İcin Gorsel Coklu Ortam Materyali Gelistirme. *Ege Education Journal,* 12(2), 44-621.
10. Buyukozturk, S., Cakmak, E. K., Akgun, O.E., Karadeniz, S. & Demirel, F. (2010). *Bilimsel Arastirma Yontemleri*. PegemA Publishing: Ankara.

11. Bilen, U. (2013). *Hazir Giyimde Kullanilan Malzeme ve Aksesuarlar*. Kerasus Publishing: İzmir.
12. Dervis, B. (2014). *Turkiye'de Endustriyel Tasarim Lisans Egitiminde Malzeme Dersinin Uygulanması Uzerine Bir Arastırma ve Malzeme Studyosu Onerisi* (Master Thesis), Anadolu University Institute of Science: Eskisehir.
13. Eric, M. (2002). *Yapı Fizigi ve Malzemesi*. Literatur Publishing: İstanbul.
14. Eristi, S.D.B. & Akbulut, A.S.T. (2014). *Anadolu Universitesi Endustriyel Sanatlar Yuksekokulu Moda Tasarimi Bolumu Ogrencileri Orneginde Sanatsal Tasarim Urunlerine Dayalı Kultur Algısı*. Journal of Egitimde Nitel Arastırmalar – ENAD, 2 (1), p.9-38.
15. Fıcıcıoglu, A. (1996). *Hazır Giyim Uretiminde Kullanılan Yan Sanayi Urunleri Uzerine Bir Arastırma,* (Master Thesis), Gazi University, Institute of Social: Ankara.
16. Gursoy, A.T. (2010). *Giyim Kulturu ve Moda*, Volume 2, Omur Polygraphy: İstanbul.
17. Jones, S.J. (2009). *Moda Tasarimi*, İstanbul: Guncel Publications: Ankara.
18. Karasar, N. (2014). *Bilimsel Arastirma Yontemleri* (26. Edition). Nobel Academic Publishing: İstanbul.
19. Kayıhan, K. S. & Tonuk, S. (2008). Surdurulebilir Temel Egitim Binası Tasarimi Baglamında Arsa Secimi ve Analizi Konusunun İrdelenmesi. *MEGARON Yıldız Technical University Faculty of Architecture, E-Journal*, 3(2), 137-154.
20. Koca, E. & Koc, F. (2016). "A Study of Clothing Purchasing Behavior By Gender with Respect to Fashion and Brand Awareness European Scientific Journal Vol.12/7, pp.234-248
21. Koca, E. & Koc, F. (2012). *Giysi Yuzey Tasarimina Disiplinlerarası Bir Yaklasımda Tasarimcının Rolu*, I. International Istanbul Textile Art Symposium Proceedings, Marmara University Faculty of Fine Arts, Istanbul, 17-20 October, p.64-75.
22. Koca, E., Koc, F. & Cotuk, S. (2009). *Geleneksel Giyim Ogelerinin Esin Kaynagı Olarak Giysi Tasarimina Katkıları*. e-Journal of New World Sciences Academy, 4(3), p. 88-103.
23. Koca, E. & Koc, F. (2009). *Giysi Tasariminda Yaraticilik*. NWSA e-Journal of New World Sciences Academi (International Refereed E-Journal), 4(1), p.33-44.
24. Lawson, B. (1997). *How Designers Think: The Design Process Demystified,* The Oxford: Architectural Press.

25. Luible, M., Varheenmaa, M., Magnenat-Thalmann, N., & Meinander, H. (2007). Subjective Fabric Evaluation. International Conference o Cyberworlds, 57, p.285-291.
26. McRobbie, A. (1998). *British Fashion Design Rag Trade or Image Industry?* London: Routledge.
27. Mucuk, İ. (2007). *Temel Pazarlama Bilgileri* (3. Edition). Turkmen Publishing: Istanbul.
28. Pamuk, B. (2002). *Uygulama Teknikleri Temel Kalip ve Dikim Uygulama Teknikleri.* İstanbul: Ya-Pa Yayın Pazarlama.
29. Perker, Z. S. (2011). Mimarlık Ogrencilerinin Malzeme Bilgisinin Arttırılmasında Fabrika Gezilerinin Rolu: Metodolojik Bir Analiz, Sakarya University, Journal of Science, 15(1), p.82-88.
30. Simmel, G. (2013). *Modern Kulturde Catısma.* (Ed. Ali Artun). Iletisim Publishing: Istanbul.
31. Sahin, Y. ve Odabası, S. (2018). Surdurulebilir Kalkınmada Moda Tasarimcısının Rolu'ne Yonelik Alanyazın İncelemesi. International Journal of Economics and Business Administration, Vol: 14, No: 2, p. 413-425.
32. Togrul, S. C. (2018). *Dogal Afetlerde Zarar Gorebilirlik Endeksi Degiskenlerinin Temel Bilesenler Analizi Yontemiyle Degerlendirilmesi: 81 İl Bazında Turkiye Uygulaması,* (Master Thesis), Ankara University, Institute of Science and Technology, Ankara.
33. Varol, E. (2010). *Moda Tasarimi Egitiminde Tasarimların Degerlendirilmesine Yonelik Bir Olcme Aracı Gelistirme, (PhD Thesis), Gazi University, Institute of Educational Sciences, Ankara.*
34. Yetmen, G. (2016). *Moda Tasariminda Temel Tasarim Ogelerinin Onemi,* Journal of Idil, Vol: 5, No: 22, p. 735-748.
35. Internet: Buyukozturk, S. (2012). *Ornekleme Yontemleri*, Lecture Notes. Web: http://w3.balikesir.edu.tr/~msackes/wp/wp-content/uploads/2012/03/BAY-Final-Konulari.pdf from February 12, 2019.
36. Internet: Turkish Language Institution Dictionary. "material" Web: http://www.tdk.gov.tr/index.php?option=com_bts&arama=kelime&guid=TDK.GTS.5d894af4ec60b4.94487891 on June 22, 2019.