

## DUAL TRAINING MODEL IN HIGHER EDUCATION\*

### (A Work-Experience on Cooperation Between School & Business for Education of Designing Jewellery and Jewellery in the Programmes)

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#### Abstract

As in many other sectors in jewelry and jewelry design sector the need for intermediate staff is rapidly increasing. Since these intermediate staff is not trained sufficiently in vocational high schools, the needs of the sector are irrecoverable. The research in this direction aims to offer a new type of intermediate staff training model by determining the needs of the jewelry and jewelry design sector. In this study it is aimed to evaluate the productivity of the jewelry students, studying jewelry and jewelry design, by sending them to jewelry sector in certain days of the week in order to practice their education. In this research a research application was made to present the advantages of school-sector cooperation in order to make the jewelry education more efficient and effective. In this direction some of the jewelry and jewelry design students were trained both in school and in sector simultaneously and changes were determined. Before and after the sector education assessment questionnaires were made to students and gathered results were studied in SPSS statistics programme in order to find out the advantages of the school-sector cooperation. In line with the emerging results new proposals have been presented on the mentioned education programmes in vocational high schools.

**Keywords:** Higher Education, Jewellery Education, Jewellery Business

## YÜKSEKÖĞRENİMDE İKİLİ EĞİTİM MODELİ

### (Kuyumculuk Ve Takı Tasarım Programlarında Eğitim İçin Sektör Okul İşbirliği Üzerine Bir Uygulama)

#### Özet

Gelişen kuyumculuk ve takı tasarım sektöründe ara eleman ihtiyacı hızla artmaktadır. Bununla birlikte kuyumculuk ve takı tasarımı meslek yüksekokulları bu ihtiyacı karşılayacak düzeyde donanımlı eğitimi sunamadığı için kuyumculuk sektöründe yeterli donanıma sahip ara eleman istihdam etmek gittikçe zorlaşmaktadır. Bu doğrultuda yapılan araştırma, kuyumculuk ve takı tasarım sektörünün beklentilerini tespit ederek bu beklentilere uygun yeni bir ara eleman yetiştirme eğitim modeli sunmayı amaçlanmaktadır.

Çalışmada kuyumculuk ve takı tasarım konularında eğitim alan öğrencilerin haftanın belirli gün/günlerinde eğitimlerini kuyumculuk sektöründe uygulamalı olarak yapmaları için gönderilmeleri durumunda bu uygulamalı eğitimin öğrenciler üzerinde ne kadar verimli olduğunu ortaya koymak hedeflenmektedir.

Bu araştırmada meslek yüksekokullarının kuyumculuk ve takı tasarım eğitiminin daha verimli ve etkin hale getirilmesi amacıyla sektör okul işbirliğinin sağlayacağı yararları ortaya koymaya yönelik bir araştırma uygulaması yapılmıştır. Bu doğrultuda kuyumculuk ve takı tasarımı öğrencilerinden bir kısmına okul eğitimiyle eş zamanlı sektör uygulama eğitimi verilmiş ve değişimler tespit edilmeye çalışılmıştır. Sektör eğitimine başlamadan önce ve eğitim süresinin bitiminden sonra öğrencilere değerlendirme anketleri yapılmış elde edilen değerler SPSS analiz programıyla analiz edilerek eğitimin verimliliği ölçülmeye çalışılmıştır.

**Anahtar Kelimeler:** Yüksek öğretim, Kuyumculuk Eğitimi, Kuyumculuk

#### Introduction

Turkish Jewellery Sector, which has about 400 tons goldsmithing and 200 tons of silversmithing capacity and employs 250.000 people, has small and middle scale enterprise. The sector, which has taken important

\* For this article "A Work-Experience on Cooperation Between School & Business for Education of Designing Jewellery and Jewellery in the Programmes of Associate's Degree" doctoral thesis was used.

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steps in institutionalization and brandization, has made its place much stronger in the world market in the recent years. These improvements have put the jewellery sector into a growing trend.<sup>2</sup>

Jewellery sector had adopted a reserved understanding for year. The sector which was in a self limited-struggle has seen that it should be open in the changing world circumstance. This reserved understanding has been a challenging obstacle between the sector and education institution.

Importing ventures and technology have turned jewellery art into a sector, an industry. The fact that unskilled workers who have no qualification learned to use an equipment on the production line and regarded it as a profession resulted in dangers both in professional and social sense. In addition, problems of qualified workers aroused in the production systems depended on handicraft which operates in jewellery sector. The paradoxical part of the matter is that while the masters to produce additional value in the sector are getting lost, the number of low qualified and unskilled workers is increasing. The students being educated in the vocational schools of jewelry and jewellery design are not able to meet the needs of the market due to busy programs, lack of time and equipment. Bilateral disappointment has caused the sector to question the academic formation.<sup>3</sup>

Nowadays jewellery sector is employing workers who have not only theoretical knowledge but also handicraft as well as administration culture.

In the recent years the interest in the jewellery has increased which resulted in an increase in the number of workers in this sector. These days the schools giving education in jewellery design are put into action.<sup>4</sup>

The lack of technological infrastructure of the universities in the branch of jewelry and the lack of sectoral partnership prevent the production trainings of jewellery and silversmith. Incompetency of training staff about silversmith is another reason for the necessary training not being able to be achieved.<sup>5</sup>

In the associate degree it is not possible to apply whole jewellery training. Because the training duration has been filled with the density of theoretical subjects. As the students are taught these subjects with a lack of infrastructure, their comprehension of the subject contents and the aims takes a long time.

Besides, education institutions expect the partnership between the schools and the jewellery sector to have one-to-one relationships and thus improve their relation.<sup>6</sup>

Roles of firm owners and professionals in training process are very important. The administrators who manage this training process which is human based support the processes of determining the needs suitable for the product and the production process, getting in interactive contact with the academy, sharing their claims, restructuring technology and the limited possibilities of education institution.<sup>7</sup>

The importance of associating the business world and education foundations is widely accepted. In many countries existence of social partners in training organizations is considered as an indispensable part of the process of employability.

Jewellery design and training and sector relations are founded in a more professional level and more consciously, and on more solid basis in foreign countries especially in England, U. S.A, Canada, Japan and Far East Countries and every single day innovations and attempts are made, researches and implementations are

<sup>2</sup> Mali Piyasalar Çalışma Grubu, "İstanbul Altın Borsası ve Kıymetli Maden Sektörü", **Türk Mali Sektörü Raporu**, İzmir İktisat Kongresi, Türkiye, 2004, pp: 45.

<sup>3</sup> Arslan, **HIRAC**, "Mücevher Takı Tasarımı Eğitime Alternatif Bir Model", **I. Uluslar arası Katılımlı Mücevher-Takı Tasarımı ve Eğitimi Sempozyumu**, Türkiye, Aydın, 2009, pp: 129.

<sup>4</sup> Bilgin, **MUALLA**, "Takı Sektör Profili", **İstanbul Ticaret Odası Dış Ticaret Şubesi Uygulama Servisi**, İstanbul, 2006, pp: 4.

<sup>5</sup> Baykal, **SEFA**, "Takı Tasarımı ve Eğitimi", **İstanbul Teknik Üniversitesi Takı Tasarımı Çalıştay Platformu**, Türkiye, İstanbul, 2008, pp: 8.

<sup>6</sup> Daşçı, **PINAR**, "Kuyumculuk Eğitiminin Yeniden Planlanarak Kalitesinin Artırılması", **I. Uluslar arası Katılımlı Mücevher-Takı Tasarımı ve Eğitimi Sempozyumu**, Türkiye, Aydın, 2009, pp: 170.

<sup>7</sup> Müftüler, **ELİF**, "Kuyumculuk Sektörünün Beklediği İnsan Profilini Yetiştirmek", **I. Uluslar arası Katılımlı Mücevher-Takı Tasarımı ve Eğitimi Sempozyumu**, Türkiye, Aydın, 2009, pp: 134.

carried out. In vocational training policy, there is a big claim for the whole time vocational schools to be extended which have more practical phases in order to answer the continuously changing situation.

As a whole, all the training systems should consider the needs of the attendants (schedules, place, possibility to integrate the lessons in to business, supplying the level of education which is required by the business market) in order to supply them a better training environment and increase the third chances, adopt a more modular approach and thus expand the training process, develop continual follow up programs and positive training systems for the student. Business enterprises try to increase the cooperation, rise the personal responsibility, increase the number of whole time workers and supply the students with skills supervision.<sup>8</sup>

### Literature

During the literature study, no domestic publication, in which implementation and theoretical training are given, was found and it was found that there is little foreign study publication about the subject in question. Some countries gave priority to the dual training system and the importance of partnership with the sector and began to apply their training policies in this direction.

Accordingly, some studies which have been reached are as follows:

(Schaeffner, 2005) in his study is talking about the structuring of training in German Sector and sector – training foundation cooperation, and the interest and pleasure of partners' fort his attendance.

(Abersek, 2004) is talking about the vocational training's adaptation to new economic and social situations in Slovenia and its adaptation to intensive change programme, and features of the current system such as the introduction of the social partnership, technological development and adaptation to the needs of market economy.

(AB Training and Culture General Directorate Commission Report, 2001) is questioning the relationships of the training systems with the business enterprises and the partners out of education system and examining its own system in order to see what can be learned from the attendance of sector regarding the motivation of the students and integrating a new perspective in to the training foundations or schools.

(Bae, 2010) mentioned that the importance of vocational education has been comprehended in South Korea and the method that is applied in order to adopt the vocational training to the sector South Korea.

(Guile and Okumoto, 2008) in his implementation studies about sector - school cooperation on the improvement of Professional implementation of silversmithing industry, he defends a training system which includes theoretic information, practical skills and commercial experience in the same environment and implements it.

(Lurie, 1998) mentions that Georgian College of Applied Arts & Technology School in Canada needs cooperation with the sector for the training of jewellery and jewellery design and that it developed a program for this cooperation.

(Heward, 1989) mentions that the most lively debate ever is the relationship between the education and industrialization, and mentions of gradually appearing studies and general points of views that provides detailed personal analyses and their distinctive contents to be regulated.

(British Jewellers' Association Newsletter, 2007) mentions of a sectoral cooperation into which jewellery sector joins by giving a formal, substantial and logistic support in order to provide product improvement integration, commercial growth and commercial continuity.

(Priori and Shen and Karamanoğlu, 2007) states that 88 % of the enterprises requires that all the design students should have an intensive work experience while only 54 % of them gives chance to the students to

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<sup>8</sup> AB Eğitim ve Kültür Genel Müdürlüğü Komisyon Raporu, **AB Ülkeleri Eğitim Sistemlerinin Gelecekteki Somut Hedefleri**, Brüksel, 2001, pp: 9-10.

gain experience; 93% of design trainers think that the work experience is necessary, but that only 54% of the schools has the necessary curriculum to provide this work experience.

(Castro, 1988) indicates that the most successful profession programs are either the ones which are dedicated to vocational education or the ones which are specialized in a regular system. In the long run, it emphasizes the importance of close relations with business market, developing correct values, value share and role models in the relationships with the companies being established and maintained.

### **An Implementation Study on Jewellery Design and Sector-School Cooperation for Jewelry Training**

In this section, a research has been done in order to show the benefits that sector-school cooperation provide for the aim of making the jewellery and jewellery design training more effective and active. Accordingly, some of the students of jewellery and jewellery design were given an implementation training of jewellery and the changes of students after implementation were determined.

#### **Aim of the Study**

In the developing jewellery and jewellery design sector intermediate staff need is increasing. As the vocational high schools cannot supply the necessary training and hardware, employing the intermediate staff having enough skills in jewellery sector is getting over and over harder. Accordingly with the study it is aimed that some recommendations will be given to training system in order to intermediate staff suitable for the requirements of jewellery sector. This study also aims to determine the benefits of experience after the students are sent to do some implementation work in the jewelry sector firms for one or several days a week.

#### **Scope and Limits of the Study**

The study was carried out on the second grade students of Jewellery and Jewellery Design Departments of Atatürk University Oltu Vocational High School and Kocaeli University Değirmendere Ali ÖZBAY Vocational High School with the time and cost factors taken into account.

In other words, the main body of the Project mostly consists of the students of jewellery and jewellery design departments of vocational high schools in the universities in Erzurum and Kocaeli. In this study volunteer students from jewellery and jewellery design were held as examples.

#### **Sample Survey**

Before preparing a definite questionnaire form and obtaining data, some meetings with jewellery and jewellery design authorities, school lecturers and students were held and they were asked about their ideas, problems and expectations about the subject matter in question. In this direction, the questions were prepared according to 5 point likert scale.

Jewellery and jewellery design authorities were asked if the students of jewellery and jewellery design could carry out implementations in their firms. After determining the firms whose owners accepted the use of their firms in the scope of the project, some meetings were held with the students of target schools in order to determine the volunteers. In consequence of the meetings, only 10 in 40 students volunteered to take part in the implementation training. Five of these ten students were selected by casting lots and they were sent to the firms.

In this process, the students who went to the firms were closely followed, some meetings were held with them and situation assessments were done, and a questionnaire which was prepared at the end of the training process was applied to the students.

#### **Collecting Data and Evaluation**

During the research, data was gained by use of questionnaire method. The questionnaires were applied to the jewellery and jewellery design vocational high school students face to face. There are two groups of questions in the questionnaire form. The first group consists of the questions about the demographic features of the students. The second group consists of questions to determine the opinions of the students about what kind of differences on jewellery and jewellery design fields could be gained and what kind of benefits could be obtained about the quality of the staff trained in this way through this implementation process.

The data was analysed by use of SPSS 18.0 statistical program. At analyze the data, frequency distribution and T-Test were used.

### Hypothesis

H<sub>1</sub>: Professional competences will be made more active through sector-school cooperation

H<sub>2</sub>: Sector – school cooperation application will be beneficial to the improvement of the student.

### Analyses of the Data

#### ***Demographic Features of the Students Joining the Sector Implementation***

10% of the students who joined the research are in the age of 19, 10% are in the age of 20, 40% are in the age of 21, 10% are in the age of 22, 10% are in the age of 23, 10% are in the age of 24, 10% are in the age of 25.

Monthly income distribution of the families of the joining students is as follows: 10% is 500 TL, 10% is 900 TL, %40 is 1000 TL, 20% is 1500 TL and 20% is 2000 TL.

Of the families whose children joined the programme 10% is occupied with this profession while the rest 90% isn't.

Of the students who joined this research 10% came to this department on purpose while the rest 90% came not on purpose.

#### ***Manner Evaluation of the Joining Students about Professional Knowledge Before and After the Sector***

In this part of the application, attendants were applied "Paired Samples Test" in order to determine if there is a difference between the thoughts of students before and after going to sector implementation. Results were presented in the form of Tables.

Table 1: Differences of the Students on Design Variable who Joined Sector Implementation Before and After Sector

| Variables   | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|---|---|--|-----------------|
| The importance of design                              | 4,6                                       | 5,0                                      | 0,178           |
| Design requirement                                    | 4,4                                       | 5,0                                      | 0,070           |
| Design resources                                      | 4,4                                       | 5,0                                      | 0,070           |
| Design efficiency                                     | 4,4                                       | 4,6                                      | 0,704           |
| The implementation of the design                      | 2,8                                       | 4,6                                      | 0,037           |
| The adequateness of the educational process of design | 4,0                                       | 4,4                                      | 0,587           |
| Design training method                                | 3,8                                       | 4,4                                      | 0,070           |

As it is seen in Table 1 among the 7 variables only "the implementation of the design" gave a meaningful difference. Analyzing the average values of the data, it was found out that the students' average consideration of the implementation of the design was 2.8, however it turned into 4.6 after the implementation process which meant they figured out the importance of the design. In other words before going to sector implementation students was not able to become aware of the importance of the design.

Table 2: Differences of Students on Creative Thinking Variable who Joined Sector Implementation Before and After Sector

| Variables                            | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|--------------------------------------|---|--|-----------------|
| Creative thinking skills             | 4,6                                       | 5,0                                      | 0,178           |
| The development of creative thinking | 4,6                                       | 5,0                                      | 0,178           |
| Application of creative thinking     | 3,6                                       | 5,0                                      | 0,108           |
| Need for creative thinking           | 3,6                                       | 4,6                                      | 0,142           |
| Creative thinking training           | 4,2                                       | 5,0                                      | 0,016           |

As it is seen in Table 2 among the 5 variables only “creative thinking training” gave a meaningful difference. Analyzing the average values of the data, it was found out that the students’ average consideration of the creative thinking training was 4.2, however it turned into 5.0 in average after the implementation process which meant they figured out the creative thinking training. In other words before going to sector implementation students was not able to become aware of the importance of the creative thinking training.

Table 3: Differences of Students on Handcraft Variable who Joined Sector Implementation Before and After Sector

| Variables   | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|---|---|--|-----------------|
| The importance of hand skills                         | 4,4                                       | 5,0                                      | 0,070           |
| Hand skill development                                | 4,6                                       | 5,0                                      | 0,178           |
| Possibilities of Manual dexterity application         | 3,4                                       | 5,0                                      | 0,016           |
| Manual dexterity application process                  | 3,4                                       | 3,2                                      | 0,799           |
| The development of hand skills on tools and equipment | 3,4                                       | 4,6                                      | 0,109           |

As it is seen in Table 3 among the 5 variables only “possibilities of manual dexterity application” gave a meaningful difference. Analyzing the average values of the data, it was found out that the students’ average consideration of the possibilities of manual dexterity application was 3.4, however it turned into 5.0 in average after the implementation process which meant they figured out the possibilities of manual dexterity application. In other words before going to sector implementation students was not able to become aware of the possibilities of manual dexterity application.

Table 4: Differences of Students on Production Variable who Joined Sector Implementation Before and After Sector

| Variables   | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|---|---|--|-----------------|
| Production information                            | 4,0                                       | 5,0                                      | 0,070           |
| Basic technique information of production process | 4,0                                       | 5,0                                      | 0,034           |
| Development of production skills                  | 3,8                                       | 5,0                                      | 0,070           |
| Production facilities                             | 3,2                                       | 4,6                                      | 0,052           |
| Production process and training                   | 3,8                                       | 4,6                                      | 0,099           |
| Production resources                              | 3,6                                       | 4,6                                      | 0,266           |

As it is seen in Table 4 among the 6 variables only “basic technique information of production process” gave a meaningful difference. Analyzing the average values of the data, it was found out that the students’ average consideration of the basic technique information of production process was 4.0, however it turned

into 5.0 in average after the implementation process which meant they figured out the basic technique information of production process. In other words before going to sector implementation students was not able to become aware of the basic technique information of production process.

Table 5: Differences of Students on Material Variable who Joined Sector Implementation Before and After Sector

| Variables              | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|------------------------|---|--|-----------------|
| Material information   | 3,4                                       | 4,6                                      | 0,208           |
| Use of Materials       | 3,0                                       | 5,0                                      | 0,034           |
| Supply of the material | 3,2                                       | 4,6                                      | 0,135           |
| Material variety       | 2,8                                       | 3,8                                      | 0,351           |

As it is seen in Table 5 among the 4 variables only “use of materials” gave a meaningful difference. Analyzing the average values of the data, it was found out that the students’ average consideration of the use of materials was 3.0, however it turned into 5.0 in average after the implementation process which meant they figured out the use of materials. In other words before going to sector implementation students was not able to become aware of the importance of the use of materials.

Table 6: Differences of Students on Design and Implementation Variable who Joined Sector Implementation Before and After Sector

| Variables  | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|--|---|--|-----------------|
| Jewelry design and application of the knowledge              | 4,2                                       | 4,6                                      | 0,477           |
| Jewelry design and application of technical knowledge        | 4,4                                       | 5,0                                      | 0,208           |
| Jewelry design and implementation of education process       | 3,8                                       | 3,0                                      | 0,242           |
| Jewelry design and implementation of educational resources   | 4,0                                       | 4,6                                      | 0,208           |
| Jewelry design and implementation of education opportunities | 4,2                                       | 3,8                                      | 0,587           |
| Jewelry design and implementation of educational environment | 4,2                                       | 4,6                                      | 0,477           |

As it is seen in Table 6, there has been no meaningful difference appeared among the six variables on jewellery design and implementation.

Table 7: Differences of Students on Design and Jewellery Variable who Joined Sector Implementation Before and After Sector

| Variables   | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|---|---|--|-----------------|
| The importance of jewellery design and jewellery field development          | 4,0                                       | 5,0                                      | 0,034           |
| Contributions of jewellery design and jewellery field development           | 4,2                                       | 5,0                                      | 0,016           |
| Adequacy of the development of jewellery and jewellery design process       | 4,2                                       | 3,4                                      | 0,099           |
| The opportunity of the development of jewellery design and jewellery        | 3,2                                       | 4,6                                      | 0,160           |
| Contributions of sector on jewellery design and jewellery field development | 2,6                                       | 4,6                                      | 0,047           |

As it is seen in Table 7 among the five variables only “the importance of jewellery design and jewellery field development”, “contributions of jewellery design and jewellery field development”, “contributions of sector on jewellery design and jewellery field development” gave meaningful differences. Analyzing the average values of the data, students’ consideration for the “the importance of jewellery design and jewellery field development was 4.0”, “contributions of jewellery design and jewellery field development was 4.2”, “contributions of the sector on jewellery design and jewellery field development was 2.6 before the sector implementation, however after sector implementation, the rate of the consideration turned into 5.0 in average for the “the importance of jewellery design and jewellery field development”, 5.0 for the “contributions of jewellery design and jewellery field development”, 4.6 for “contributions of sector on jewellery design and jewellery field development and thus it was concluded that they became more aware of the importance of the sector. In other words before going to sector implementation students were not able to become aware of the importance of the jewellery design and jewellery field development, contributions of jewellery design and jewellery field development and contributions of sector on jewellery design and jewellery field development.

Table 8: Differences of Students on Training in Sector Variable who Joined Sector Implementation Before and After Sector

| Variables  | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|--|---|--|-----------------|
| Contributions of educational work in the sector on social development      | 3,4                                       | 5,0                                      | 0,035           |
| Contributions of educational work on career development                    | 4,6                                       | 5,0                                      | 0,178           |
| Benefits of educational work in the sector                                 | 4,0                                       | 5,0                                      | 0,034           |
| Challenges in educational work in the sector                               | 3,4                                       | 2,6                                      | 0,099           |
| Contributions of educational work on design                                | 4,8                                       | 4,6                                      | 0,374           |
| Contributions of educational work on the development of application skills | 4,8                                       | 5,0                                      | 0,374           |

As it is seen in Table 8 among the six variables only “benefits of educational work in the sector”, “contributions of educational work in the sector on social development” gave meaningful differences. Analyzing the average values of the data, students’ consideration for the “contributions of educational work in the sector on social development was 3.4”, “benefits of educational work in the sector was 4.0”, however after sector implementation, the rate of the consideration turned into 5.0 in average for “benefits of educational work in the sector” and “contributions of educational work in the sector on social development”, and thus it was concluded that they became more aware of the importance of the sector. In other words before going to sector implementation students were not able to become aware of the importance of the benefits of educational work in the sector and contributions of educational work in the sector on social development.

Table 9: Differences of Students on Behaviour in Sector Variable who Joined Sector Implementation Before and After Sector

| Variables   | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|---|---|--|-----------------|
| Behavioural challenges in the sector                    | 4,8                                       | 4,6                                      | 0,374           |
| Behavioural principles in the sector                    | 4,6                                       | 4,6                                      | 0,374           |
| Moral values of behaviour in the sector                 | 4,8                                       | 4,6                                      | 0,374           |
| Gains from the way of behaviour in the sector           | 4,2                                       | 5,0                                      | 0,099           |
| Behavioural disorders in sector and professional losses | 4,0                                       | 5,0                                      | 0,034           |

As it is seen in Table 9 among the five variables only “behavioral disorders in sector and professional losses” gave a meaningful difference. Analyzing the average values of the data, it was found out that the students’ average consideration of behavioral disorders in sector and professional losses was 4.0, however it turned into 5.0 in average after the implementation process which meant they figured out the behavioral disorders in sector and professional losses. In other words before going to sector implementation students were not able to become aware of the importance of behavioral disorders in sector and professional losses.

Table 10: Differences of Students on Social Variable who Joined Sector Implementation Before and After Sector

| Variables  | Average of the Students Before the Sector | Average of the Students After the Sector | Sig. (2-tailed) |
|--|---|--|-----------------|
| Development of social communication                  | 4,2                                       | 5,0                                      | 0,099           |
| Self-expression                                      | 4,8                                       | 5,0                                      | 0,374           |
| Self-confidence development                          | 5,0                                       | 5,0                                      | 1,000           |
| Adaptation to the working environment                | 5,0                                       | 5,0                                      | 1,000           |
| Communication and acceptance within the sector       | 4,4                                       | 5,0                                      | 0,070           |
| Communication within the organization                | 4,8                                       | 5,0                                      | 0,374           |
| Compliance with the working conditions               | 5,0                                       | 5,0                                      | 1,000           |
| The working system of the sector and the institution | 4,8                                       | 4,6                                      | 0,374           |
| In sector providing priority in competition          | 3,8                                       | 5,0                                      | 0,033           |

As it is seen in Table 10 among the nine variables only “in sector training providing priority in competition” gave a meaningful difference. Analyzing the average values of the data, it was found out that the students’ average consideration of in sector training providing priority in competition was 3.8, however it turned into 5.0 in average after the implementation process which meant they figured out the in sector training providing priority in competition. In other words before going to sector implementation students were not able to become aware of the importance of in sector training providing priority in competition.

### Conclusion and Suggestion

Nowadays, the necessity for the training foundations’ cooperation with business world is accepted. Regarding the training, most countries pay much importance to the existence of social partners in the organization of education and they consider the employability as an indispensable part of it. The conclusion of this study on sector-school cooperation is as follows;

- Sector training must be compulsory to comprehend the feasibility of the design.
- Awareness of creative thinking development can be obtained through sector training.
- Possibilities of handcraft practice and development can be provided through sector training better.
- Importance of material use has been comprehended through sector implementation.
- With sector training, necessity of production phase basic technique knowledge has been noticed.
- Importance of jewellery design and jewellery field knowledge has been comprehended through sector implementation.
- Benefits of in sector trainings and contributions of trainings to social development are provided through sector training.
- Behaviour disorders and professional losses are got rid of through sector training.
- In sector training provides priority in competition.

Considering the findings obtained during the research, the cooperation of jewellery and jewellery design departments of vocational high schools with the sector is indispensable. In other words, school-sector cooperation will be beneficial for a more active and effective training of the students. As new formations in education are taking place and the education system of higher education foundations is being questioned today, it can be recommended that jewellery and jewellery design vocational high schools form cooperation with the sector. By increasing the number of research subjects through studies carried out with different parameters, it will be possible to reveal the contributions of sector-school contribution to the parties such as training, sector, students, etc.

### References

- Abersek, B. (2004). Vocational Education System in Slovenia between the Past and the Future, *International Journal of Education Development*, vol. 24, 547.
- Arslanyan, H. (2009). Mücevher Takı Tasarımı Eğitimine Alternatif Bir Model, *I. Uluslar arası Katılımlı Mücevher-Takı Tasarımı ve Eğitimi Sempozyumuna sunulmuş bildiri*.
- AB Eğitim ve Kültür Genel Müdürlüğü Komisyon Raporu, (31.01.2001). *AB Ülkeleri Eğitim Sistemlerinin Gelecekteki Somut Hedefleri*, Brüksel, 9-10.
- Bae, K. (2010). Labor Strategy for Industrialization in South Korea, *Pacific Affairs*, vol. 62, No. 3, autumn, 355.
- Baykal, S. (2008). Takı Tasarımı ve Eğitimi, *İstanbul Teknik Üniversitesi Takı Tasarımı Çalıştay Platformuna sunulmuş bildiri*.
- Bilgin, M. (2006). Takı Sektör Profili, *İstanbul Ticaret Odası Dış Ticaret Şubesi Uygulama Servisi*, 4.
- British Jewellers’ Association Newsletter, (2007). *Projects Announced by Sector Investment Plan*, London, <http://www.bja.org.uk/jib/246>, Erişim Tarihi: 02.04.2010
- Castro, C. M. (1988). The Soul of Vocational Schools: Training as a Religious Experience, *International Review of Education*, vol. 34, no. 2, 203.

- Daşçı, P. (2009). Kuyumculuk Eğitiminin Yeniden Planlanarak Kalitesinin Artırılması, *1. Uluslar arası Katılımlı Mücevher-Takı Tasarımı ve Eğitimi Sempozyumuna sunulmuş bildiri*.
- Guile, D., Okumoto, K. (2008). Developing Vocational Practice in the Jewellery Sector through the Incubation of a New "Project-Object", *International Journal of Educational Research*, vol. 47, 252-260.
- Heward, C. (1989). The Class Relations of Compulsory School Attendance: The Birmingham Jewellery Quarter, *History of Education Quarterly*, vol. 29, no. 2, 215.
- Lurie, M. (1998). Jewelry and Lapidary Students at Georgian College Learn to Blend Artistry with Technical Skill, *Jewelleryartist Magazine*, 1-4.
- Mali Piyasalar Çalışma Grubu, (2004). İstanbul Altın Borsası ve Kıymetli Maden Sektörü, *Türk Mali Sektörü Raporu, İzmir İktisat Kongresine sunulmuş bildiri*.
- Müftüler, S. E. (2009). Kuyumculuk Sektörünün Beklediği İnsan Profilini Yetiştirmek, *1. Uluslar arası Katılımlı Mücevher-Takı Tasarımı ve Eğitimi Sempozyumuna sunulmuş bildiri*.
- Priori, S. D., Shen, S.T., Karamanoğlu, M. (2007). The Problems with Design Education in the UK, *International Association of Societies of Design Research The Hong Kong Polytechnic University*, 8.
- Schaeffner, K. (2005). Alman Eğitim Yönetimi Sistemi ve Yerelleşme Kanunlarındaki En Son Gelişmeler, *Berlin Eğitim Bakanlığı Eğitim Planlama, Yenilikler, Okul Gelişimi ve Öğretmen Eğitimi Dairesi*, Berlin, 9.