Jewellery students teaching in creative work

Egorova, U.F.; Amanbaeva, L.I.; Noev, I.I.

Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

International Journal of Advanced Studies (ISSN 2227-930X Online) ■ VOL. 2, NO. 1, July, 2012
www.ijournal-as.com

JEWELLERY STUDENTS TEACHING IN CREATIVE WORK

Egorova U.F., Amanbaeva L.I., Noev I.I.
North-Eastern Federal University
Yakutsk, Russia
egorovayf@mail.ru

Abstract
This article is dedicated to students' creativity in precious metal working during the institute training period. The most effective methods and processes of Turkic peoples' traditional technologies of precious metal working are given here. The developed conception, on the base of ethno-technical creative work, introduced in the process of education, contributes the excellence of skill achievements in the jewel making.

Keywords: jewellery, artistic handicraft, precious metal working, skill, Turkic peoples, creative work, ethno-technical creative work, creativity, process of education, training, creative ability, conception.

The only in Russia specialization "Precious stones and metals working technology" (PSandMWT) of Federal North-East University by Ammosov M.K. within the specialty "Decorative materials processing technology" is one of the unique and prestige specialties for engineers in jewelry and diamond-mining industry training. The main specification of the profile is that, during the training course, all students are provided with precious stones and metals of high value for mastery and practical skills growth. The outbound rate of loss, introduced for the students, brings great financial charges. That is why the production-and-training laboratories of "Jewellery technology" and "Cutting production technology" have controlled-access status. Overall operations are made under teachers' and laboratorians' strict control, not only during training hours, but during independent work hours too, which make 50% of labour-intensiveness in the curriculum. The laboratorians provide students with rough diamonds, gold, silver, attend machine work, equipment, and watch the working process. One more specification is oriented to train graduates, having professional competence in line with up-to-day labour-market request and wishes of employers, the region lapidary work and jewellery customers. The third specification is in training multifunctional professionals: students are offered a wide choice of disciplines (50%) and have possibility to form their own professional training trajectory [4].

These new conditions, created and developed, give possibility to train high-level experts for jewellery, lapidary and stone-cutting industries in the market.

It is important, in this article, to pay attention to creativity training of the students of PSandMWT specification – jewellery engineers. Owing to the novelty and singularity of this profile in the world, there are no enough special researches, dedicated to the problem of creativity development with Turkic peoples' traditional technologies of precious metal working methods. This research makes a contribution to this problem solving.

The ancestral home of Turkic peoples is Central Asia Steppes. Beginning from the II century and ending with the XIII century, pressed by the neighbours, they gradually came to Russian contemporary territory and occupied lands where their posterity now lives. Their knowledge and skills, customs and traditions, these peoples tried and are trying to use wisely in their work and life.

Turkic people jewelry work is closely connected with their everyday life and the certain ethnos habitat forming. Turkic artistic handicraft of precious metals working has an ancient background. The jewellery traditions were composing and perfecting during centuries. There were a number of outstanding silversmiths among Turkic craftsmen; they were specially honored by people, had privileges and rights in the society, and were well known far beyond the bounds of their localities [6]. Guided by the nature tips, they created and perfected approaches and methods of traditional technology, and sometimes were carried away by metals working and fell into "incubation period", forgot all the domestic problems and were busy only with jewels making. With all their soul they penetrated the technological process, revering and worshiping divine ancestors' patrons: Yakut – The Great Kuday Bahsy, Tatar – Muhsin-bin Osman and others [6, 3].

Jewellery was a hereditary occupation, it went from the father to the son. There were noticed even separate clans of silversmiths from immemorial times. Skill secretes were not divulged, and that is why were lost, some precious metals working technological approaches were not kept, for example: deadalus enamel, inlaid work, amalgamation, silvering, and so on [5].

In this research we outline the most effective approaches and methods of Turkic peoples' traditional technologies of precious metal working, which may be used nowadays at jewels hand making:

- *sand molds casting;*
- *charcoal using in metal smelting and soldering;*
- *open fire soot using;*
- *soldering flux liquid paste, on a natural base, using.*

Sand molds casting. Nowadays, jewels molding is made in special smelting furnaces, in spin casters. What one should do, if in small jewelry house there is no possibility to get and place the equipment? Then one should stop on traditional casting methods. Sand molds casting is very practical and convenient if the manufactured articles and parts are of precious metals little quantity. This method was widely used in the past, even to create very complex items as a whole.

The sand mold casting technology consists of molding flasks making, which present two square frames of steel or light metals, accurately adjusted to one another. For precise two parts fixing, the guide pins of one molding flask entered the holes of

the other. There should be a sprue cup in one end of the flasks for molten metal running.

Great attention is paid to the sand during molding flasks fulfilling. Dry sand is bolted, then water is added and mixed carefully till it has become viscous and plastic. Small balls are made from this mass (for test), then they are thrown up and caught: if they did not fall to pieces – the sand is good. Besides the sand, the ancient silversmiths used carefully chosen box clay with very fine structure [2].

The technological approach to form manufacturing can be described in the following way: the lower molding flask part was placed on the base (a knotless board usually) and was filled with stiff box clay mixture, which was carefully made even. Then the model of the future article was pressed into it. And, after being splashed with water, the model was powdered with finely crushed charcoal. Then the filled with clay upper frame, did not separated from the base, was placed on the lower one. And, at last, both frames were pressed to each other with a clamp. Then the sand with the model was dried on a fire till it was completely hard. After it, the model was taken out, and a groove in the hardened box clay was made, connecting the model imprint with the outer sprue cup. The filling was made from a bowl through a clay funnel. The casted article was taken out the form after its cooling-down. Irregularities and joints were deleted with files [5].

This ancient sand casting method has the following peculiarities:

- item casting as a whole, there is no need in soldering;
- getting a maximal identical molding;
- casting can be made for articles of any complexity;
- the form multiuse;
- metal waste and loss are small.

Charcoal using in metal smelting and soldering. Nowadays melting pots of fat clay, without iron or lime and with sand and chamotte flour, are used to avoid cracking and shrinkage. The pot inside is usually glazed with borax to strengthen it. There are some shortcomings though: the first – is that precious metal small parts stick to the glaze; and the second – is the pots slow heating during metal casting. At the same time a large amount of open fire burner heat spreads in the environment, and as a result metal casting continues for a long time which causes loss of precious metal characteristics and quality.

To avoid these limitations charcoal using is ideal. Charcoal is heat-resistant and unequal heat-insulating material, which provides quick metal casting and as a result quality (tarnishing takes less time during molding) [3]. To make a pot of charcoal does not take much time, because of its softness and easy processing. More over such pots can be multiused and very convenient. It is important to put hot charcoal pots, right after metal casting, in special containers with covers, without access of oxygen to stop further coal burning.

Charcoal is also successfully used in jewels soldering as a backing bar for soldering parts placing. It is usually a square knotless charcoal bar. Quality and quickness of the soldering process is guaranteed.

Open fire soot using. During thermal processing, an oxide film is formed on the surface of most metals. To prevent metal from oxidation, jewelers use soldering flux, consisting of borax and boric acid; this turns into something like glaze after strong heating. Fluxes can be destroyed by light, that is why they should be kept in lightproof vessels, and only necessary quantity can be placed on a work place. Frequent fluxing causes a green film appearance, and this leads to a considerable loss in time and material. Flux making, right split calculation, the prepared solution heating, and its constant refreshing and so on – all these take a lot of time.

Traditional technology metal working jewelers used open fire soot as a flux. Fire soot forms a perfect protective coating from oxidation during metal thermal working. Black soot, for example, covers heated silver with a thin film. Different burners are used for this effect (gas, petrol); their outer light jet is the soot source. It is important to pay attention to small amount of air delivery to create a soft noise flame. This method is very convenient and provides high quality of implementation [5].

Soldering flux liquid paste, on a natural base, using. A special paste, so called "birch sediment ", presents a great interest. It was used by Bashkir people in decorative-applied art for jewels soldering. They took a clot of birch ashes, let it settle, then poured it in a clean cast-iron or enamelled vessel, put it on fire and slowly evaporated water. The sediment on the bottom was scraped off and mixed with salt and borax (3 parts of sediment, one part of salt and one part of borax), then they added a little bit of water and boiled it till there was a pure yellow flux paste. This paste content was used even for very fine jewels like filigree work; and is absolutely safe for human's health [1].

On the base of the written above historic development analysis of Turkic peoples' precious metal working traditional technology, we insert a term "**ethno-technical creative work**". The ethno-technical creative work is not a consciousness phenomenon or structure, but the ontological relationship, connecting a human with the creative world, and being in continuous movement. Its culmination is *inspiration,* with a characteristic special emotional upheaval, ethno-mentality and ethno- tolerance. Ethno-technical creative work is used as an element of students creative abilities development; and as a whole set of preformed knowledge, abilities, jewelery skills, personal qualities and students' value-motivated guidelines.

During the training process, students show a great creative interest and curiosity to the knowledge of Turkic peoples' jewelry, where national original peculiarities are well seen, they have come from their culture, everyday life and household, religion and world outlook development conditions. Connecting with this, we have developed a conception, making an initial base for creative abilities (creativity) development of a future jewelery engineer, as his/her professional-important quality.

The developed conception structure includes three base blocks: *theoretical- methodological, psycho-educational and technological*. The blocks complement to each other, creating a dialectical unity of the students' creative abilities development process. The technological block is given a special attention, which includes two components: **ethno-technical creative work and creativity.**

On a preliminary stage of the developed conception introducing, the experimented group was tested on students' self-appraisal of their creative self-realization level and readiness to creative abilities development. The test showed that more than a third part of the students appreciated their creative self-realization as not formed, and more than a quarter thought that they had stopped in their professional self-development. In other words, the quantity of students negatively valuing their self-development was two thirds from the general number of respondents. Only one of the six believed in his/her potential

possibilities, and only one of the seven appreciated his/her self-realization as a successful one. Several students found difficulty in replying the question.

The developed conception introducing in the process of education was made on the base of the jewelry house of the department, and was accompanied with creative atmosphere forming and with a personality-centered approach to education. Each student was involved in the active learning process through independent, creative activity, showing **ethno-technical creative work**. The creative tasks to invent a national jewels image had different content, character and difficulty grade. To have a success, the students had to understand the methods, content and succession of actions. The choice of the most effective way to achieve the goal (the creative project realization) went on in an exchange of views with the teacher. This type of education organization favored not only to value attitude development towards the nature, traditions and originality of the people, but to the students' volitional, emotional, mental development too.

During the training there was one more task, except ethno-technical creative work development, it was **creativity** forming, presenting one of the central lines of personality development; this let a person to show his/her individuality and iniquity [7]. This was reached by students' systematic dynamic creative learning activity. The project realizations, artistic flair, beauty feeling in students' activity were encouraged. The teacher paid attention to a student's ability to produce maximal number of ideas. The more ideas mean the more possibilities to choose the most **original** of them, differing from widely known and generally accepted. Much attention was paid to the ideas' **working out**: some students can produce original ideas; other students can work out the existing idea in details and with creativity. Both activities were considered as a variant of a person's creative activity realization, resulting in an individual style, character, manner forming. It was noticed that **general ability** of images creation came out as a **special ability**, because of the new quality level of the future professionals training.

An individual program was developed for each student, this included course of stated creative task solution planning and optimized the learning activity, raising its effectiveness. During individual program realization, we diagnosed students' creative abilities development on the base of the following underlined creative abilities development levels:

- low level: characterized by a student's ability to use methods, operations and actions of precious metal working, from the number showed by the teacher, and according to a certain algorithm;
- middle level: characterized by an independent goal-formation and self-planning of the student's activity;
- high level: characterized by a student's independent decision to use one or another metal working method, and by an independent choice of control and value criteria for his/her activity results appreciation.

The preliminary diagnostics results let us assert that **the given conception realization favours students'** (the future jewelry engineers) **ethno-technical creative work development, rising desire for high mastery achievement in traditional for Turkic peoples precious metals working technology adoption.**

REFERENCES

[1] Avidjanskaya S.A., Bikbulatov N.V., Kuzeev R.G. Bashkir decorative-applied art / S.A. Avidjanskaya, N.V. Bikbulatov, R.G. Kuzeev. – Ufa, 1964. - 255p.

[2] Brepol E. Jewelry theory and practice / E. Brepol. – Sanct-Peterburg.: Solo, 2000. - 490 p.

[3] Valeeva-Suleymanova G.F. Kazan Tatars decorative-applied art / G.F. Valeeva-Suleymanova, R.G. Shageeva. – M.: Soviet artist, 1990.- 115 p.

[4] Egorov I.I. 261002 speciality forming "precious stones and metals working technology" / I.I. Egorov, M.A. Emelyanova. – Yakutsk, LLC Rits "Ofset", 2012. – 135 p.

[5] Zykov F.M. Yakut jewels / F.M. Zykov; research editor I.A. Potapov. – Yakutsk: Publishing house, 1976. – 64 p.

[6] Zykov F.M. Yakut jewels evolution / F.M. Zykov // All-USSR results session of field ethnographical and anthropologic researches, 1976-1979: the report thesis. - Ufa, 1980. – P.182.

[7] Rodgers K.R. Making up of personality/ K.R. Rodgers – M.: Progress, 1994. - P.10.