Jurnal Teknologi

Full paper

The Innovation of Labu Sayong Manufacturing Technology: A Technical Analysis

Hamdzun Haron[a*], Narimah Abd Mutalib[b]

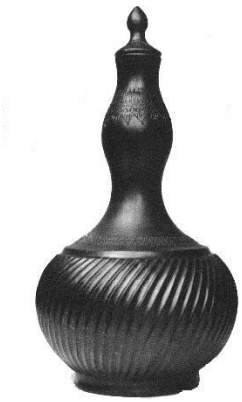
[a]*Centre for General Studies, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia*
[b]*Bukit Changgang Primary School, 42700 Banting, Selangor, Malaysia*

*Corresponding author: hh@ukm.my

Article history

Received :10 December 2013
Received in revised form :
12 January 2014
Accepted :15 June 2014

Graphical abstract



Abstract

Labu Sayong or also known as Labu Picit (pinched clay pitcher) is one of Malay potteries craft heritage originated from the state of Perak. This hand-crafted work has the specialties of its own. The stored water in the clay pitcher is colder than usual and it is believed that the water can refresh the body when consumed. Labu Sayong is an adaptation of a gourd and served as a symbol of intellectuals of the Malays in the past. It is produced through several traditional processes in stages and it takes some time to complete. This factor may cause its extinction. Therefore, many entrepreneurs have switched to a new innovation in the manufacturing process. Now, Labu Sayong has been produced by using moulds and it is called Labu Acu or cast clay pitcher. This innovation can produce commercialized product and the process is more productive than the traditional ways. To take these matters into consideration, the author used qualitative research method by using cultural approach in collecting written or visual data such as interviews and observation. An analysis of the technical aspects has found that the casting technique has successfully improved the quality and quantity of Labu Sayong which meets market demands. It is hoped this paper will give a certain amount of knowledge and facts that the manufacturing process of Labu Sayong is now going through a technological innovation. Innovation is crucial to ensure that Malay heritage will continue to exist and will never lost in the advanced technological era.

Keywords: Innovation; manufacturing technology; casting; labu sayong

Abstrak

Labu Sayong atau juga dikenali dengan nama labu picit merupakan salah satu kraf seni tembikar warisan bangsa Melayu yang berasal dari Negeri Perak Darul Ridzuan. Hasil rekaan tangan ini mempunyai keistimewaannya tersendiri. Air yang disimpan di dalam labu berasa sejuk dari air biasa dan apabila diminum dipercayai boleh menyegarkan tubuh badan. Labu Sayong adalah adaptasi daripada bentuk buah labu air dan merupakan simbol intelektual orang Melayu zaman silam. Ia dihasilkan melalui beberapa proses tradisional secara berperingkat-peringkat dan mengambil masa yang agak lama untuk menyiapkannya. Masalah ini boleh menyumbang kepada kepupusannya Senario ini mengakibatkan ramai di kalangan pengusaha beralih arah kepada satu inovasi baru dalam proses pembuatannya. Kini, Labu Sayong dihasilkan dengan menggunakan acuan dan dipanggil labu acu. Penginovasian ini dapat menghasilkan produk yang lebih komersil lagi produktif berbanding cara lama. Untuk mempertimbangkan hal-hal ini penulis menggunakan metode penelitian kualitatif, dengan pendekatan kebudayaan iaitu dengan mengumpulkan data-data tertulis mahupun visual seperti wawancara dan observasi. Satu analisis daripada aspek teknikal mendapati bahawa pengacuanan berjaya meningkatkan kualiti dan kuantiti pengeluaran labu dan seterusnya dapat memenuhi permintaan pasaran. Di harap kertas kerja ini akan memberi pengetahuan dan kenyataan kepada kita bahawa proses penghasilan Labu Sayong masa kini sudah melalui satu inovasi teknologi. Inovasi ini amatlah penting bagi memastikan warisan bangsa Melayu terus wujud dan terhindar daripada ditelan zaman yang semakin berteknologi canggih.

Kata kunci: Inovasi; teknologi pembuatan; pengacuanan; labu sayong

© 2014 Penerbit UTM Press. All rights reserved.

1.0 INTRODUCTION

"…..I urge the Malay intellectuals in medical field to conduct serious research and development programmes to explore this huge potential. Likewise in the area that we have the advantage of such as biodiversity and biotechnology, irrigation and drainage, food production, agriculture, aesthetic, weaving, wood carving, ceramic and others. I believe the Malays are now dominating particular traditional technologies that require modification and innovation in terms of production to be benefited by those areas and to be given commercial value." (Zuta, 2001).

That was an excerpt from the opening speech of the former Malaysia's Deputy Prime Minister, Datuk Seri Abdullah Ahmad Badawi during the Malay Convention 'Malay World, Islam World – Unite we must' in Malacca on 19th of October 2001. Based on that speech, it is obvious that he encouraged Malay intellectuals to conduct serious researches in their own respective field. This is because the Malays who use traditional ways in manufacturing certain products are seriously in needs for innovation and transformation from the aspect of technical production. The benefit of innovation and transformation will create commercialized products in the market.

It is clear that our government has taken a serious look for the future of traditional Malays handicrafts including Labu Sayong. Traditional pottery manufacturing technology is frequently associated with the economy of Malays in the rural area. To increase the economy of pottery makers, the production method needs a transformation. With the government's concern over this matter, an innovation of Labu Sayong manufacturing technique has been introduced to the pottery makers.

What is innovation? Innovation is derived from the Latin language, innovare which means 'to produce something new or the success of exploiting new idea'. (Joe, John and Keith, 2001) 'Inovasi' is a Malay word that has been borrowed from the English word innovate, and according to Oxford Fajar, Advanced Learner's English-Malay Dictionary (2001:952), innovation is defined as 'to make a change'. 'Komersil' is also originated from English word commercial means 'of or relating to commerce'.

According to Ainon and Abdullah (1995:16), innovation is a new technology of development or application of a technology for particular reasons. The purpose of innovation is to create new products and services for users. Therefore, technology is the core to innovation because without technology, the objective will not be achieved. Usually, a product will experience three developmental stages which are 1) brought to existence, 2) matured and 3) expired. Brought to existence means the moment once it has been created and developed. Maturity is a level of a certain products to be developed and been marketed. Lastly is the expiry of a product. At the last stage, if innovation has not been introduced, the product will not survive in the market and finally extinct. Therefore, improvement and transformation should be done continuously to retain the survival of ideas or products in the market (Mohd Azhar, and Muhamed Fauzi, 2006: 295).

Based on the statements above, innovation is a concept that has been used in order to interpret a revolution phenomenon by implementing a transformation towards the development and the advancement in trading aspects. This concept can also revive a product to catch the viewer's attention. Likewise for Labu Sayong; no innovation means extinction.

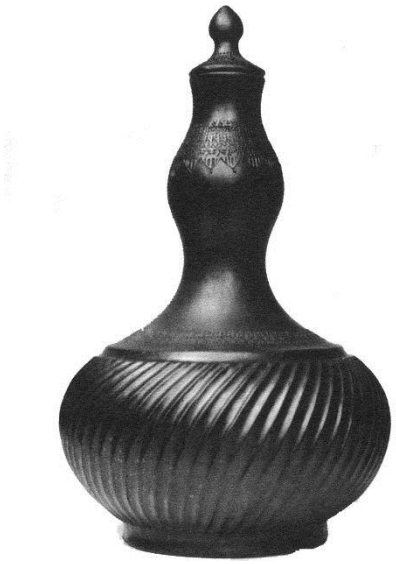
Through research, there were only six families producing the clay pitchers using traditional ways during 1980's and in 2010, there were only two pandai labu left. We don't want Labu Sayong to disappear like one of the traditional Malay potteries that had extinct in 1995. 'Pasu Kechur' from Perlis was declared as extinct by the Malaysian Craft Development Corporation (MHDC) because the skill of making Pasu Kechur has not been inherited to anybody. (Ibrahim & Suhaimi, 2005: 15)

2.0 CASTING THE LABU SAYONG

Originally Labu Sayong was made only by women using their hands. Their favorite place to produce this craft was under the house made on stilt. The traditional way of clay pitcher production was actually unproductive because pandai labu can only produced two or three pieces Labu Sayong within one day. Nevertheless, the demand for this craft was high even though it was difficult to fulfill (see Picture 1 and 2).

In 1986, a Japanese ceramic researcher from Standards and Industrial Research Institute of Malaysia (SIRIM) Berhad had visited Koperasi Kg. Kepala Bendang. He introduced and demonstrated the Labu Sayong slip casting techniques to the traditional Labu Sayong entrepreneurs and several teaching staffs of MHDC. They found out that this new technique was easy to learn and could produce a large quantity of clay pitchers in a very short time. Since then, the production of clay pitchers is no longer been carried out in Kg. Kepala Bendang alone. There were seven different villages in Sayong district namely Kg. Talang Ulu, Kg. Sayong Lembah, Kg. Temiang, Kg. Pauh, Kg. Sayong Sekolah, Kg. Bukit Lada and Kg. Padang Serai that had been involved in this industry. This pottery had been produced inside a workshop complete with machines and modern equipments and had not been produced under the house made on stilt like in the past.

There are nine primary processes that need to be carried out for Labu Sayong production by using mould, which is known by locals as 'Labu Acu' or cast clay pitcher. The processes are the model making, mould making, slip preparation, slip casting, burnishing, decorating, drying, firing and using paddy husks to get the blackened effect. These processes take approximately four to five days only.



Picture 1 Traditional Labu Sayong: Labu Panai

Picture 2 Producing *labu picit* using pinching technique

2.1 The Model Making of Labu Sayong

The model is the actual clay pitcher form made from a block of plaster of Paris. The block is placed on a jolly jigger machine for model making process. The shape of clay pitcher has been produced by using a trimming method. From a cylinder, it is finally transformed into a clay pitcher form. Several types of blade were used during this process. The model is left to dry for a while before the mould making process started. Firstly, the model is lathered with a special soap so it won't stick to the mould piece. Usually one model can be used to make around 15 to 20 pieces of mould. The mould is also made from the same material that is plaster of Paris.

2.2 Labu Sayong Mould

Mould block has been produced from clay pitcher model. One block of clay pitcher mould consists of three separate pieces for left, right and bottom part. Material and tools are needed to make a mould is plaster of Paris, four square pieces of wooden/glass board, a piece of template, a sponge, special soap, bicycle tubes, a bucket and a grater.

The clay pitcher model is segmented into two parts by making a straight line as a guide. Then, a special soap is gently lathered on the model using a sponge. The soap acts as model release agent. The purpose is to avoid the model from sticking to the mould piece.

Lay the model on a piece of clay slab to stabilize it. The second step is making the first mould piece. The soap lathered model is surrounded with a template and the four pieces of board. Tie the boards with rope to stabilize it when plaster of Paris mixture is poured into the block.

Plaster of paris is introduced to a bucket of water little by little until it leveled up with the water. Stir the mixture slowly in one direction to avoid air bubbles from forming. Stir it for two minutes using hands until there is no sign of plaster lumps. After the water and the plaster are well mixed, pour it slowly into the wooden/glass block until it covers the model.

The plaster mixture will set gradually and it will become warm to the touch. A cold plaster surface means the mixture is fully harden and the wood block can be opened. The uneven surface of the mould is scraped then turned upside down; we can see half of the model is protruding while another half is still embedded in the first mould piece. Template is taken out slowly from the mould piece.

The next step is making a pinhole on the first mould piece; three pinholes are needed for the left, right and bottom part of the large size clay pitcher mould. For small size clay pitcher, only two pinholes are needed that is for the left and right part. The third step is making the second and third mould pieces. The process is the same with the first mould only without the usage of template or making a pinhole.

The next process is separating each mould piece and taking out the clay pitcher model from the mould. After the model has been taken out, the soap residue on the internal part of the mould is wiped off using hot water. This process is important to enable the water absorption from clay slip works. The completed mould block is secured using bicycle tubes that have been cut into long strips. The rubbery tubes can strengthen and tighten the mould pieces during slip casting process to ensure no leakage. A mould block for Labu Sayong is now completed (see |Picture 4).

2.3 Slip Preparation

This process is very important because the quality of Labu Sayong is determined by the slip itself. Processed clay is called slip. To produce slip, clay from anthill and Sayong river bed was taken. The clay was sieved to separate impurities and put inside a plunger machine. It is mixed with water to enable the rotor of the plunger moves and the clay to be grinded perfectly. Sodium silicate is added to give plasticity to the clay. The process takes 3 to 4 hours before the slip is soaked for a day (see Picture 5).

2.4 Slip Casting

Slip casting process is a clay pitcher making using mould and slip. Slip is poured until it fills the mould up to the brink and left for few minutes. The slip will sink because the plaster wall is sucking up the liquid to form the thickness of the clay pitcher body. The slip should be added until the desired thickness which is around 1cm is achieved. The slip excess is then poured out. This process takes around 15 to 20 minutes depending on the dampness of the mould piece. The clay body is left to dry for a while inside the mould so it can be extracted easily. At the same time, the drying process of the clay pitcher is shortened because plaster of Paris used for the mould is absorbing water from the clay pitcher body. After the body has been taken out from the mould, it will be cleaned and smoothed using a fine sponge. It is left to dry again for the burnishing process (see Picture 6 and 7).

2.5 Burnishing

Burnishing is a process to smoothen the surface of the cast clay pitcher and usually done by women. This process needs a deft hand to ensure the wall of the clay pitcher looks perfectly shiny. It is carried out cautiously because the body of a cast clay pitcher is not as dense and thick as clay pitcher made using pinching technique. Burnishing has been done by using spoon or river pebbles. But there are several Labu Sayong makers who chose not to burnish their clay pitchers because they are producing decorative clay pitchers and not for storing water (see Picture 8).

2.6 Motifs and Decoration

Decoration is a process to decorate the surface of Labu Sayong with motifs. Motifs were etched on a wooden stamp. The original motifs such as clover (bunga cengkih), star anise (bunga lawang), spanish cherry (bunga tanjung) and others are still being used to

ensure the identity of Labu Sayong. These motifs were stamped on a leather-hard surface of Labu Sayong (see Picture 9).

2.7 Drying

Decorated clay pitcher is left to air-dried or put under the sun and the process is still the same with traditional ways of drying the Labu Sayong (see Picture 10).

2.8 Firing

Firing is the process to harden the body of Labu Sayong. In line with the modernization, Labu Sayong is no longer fired in open trenches. This is because natural fuel like wood and bamboo is getting scarce. It is also to ensure air pollution caused by open firing does not occur. Currently, the firing of Labu Sayong is carried out using gas kiln that is much safer, cleaner and time saving. The firing is carried out slowly and the duration is around 10 hours or until the temperature reached 850 degree Celsius (see Picture 11).

2.9 Reduction

Reduction is a process to blacken the Labu Sayong. Nowadays paddy husk is no longer used in reduction process. This is due to the difficulties of getting the seasonal paddy husk and the price is quite expensive as well. As an alternative, saw dust/wood chaff is used for reduction process (see Picture 12).

Picture 3 Labu Sayong model making

Picture 4 Labu Sayong mould pieces

Picture 5 Slip preparation

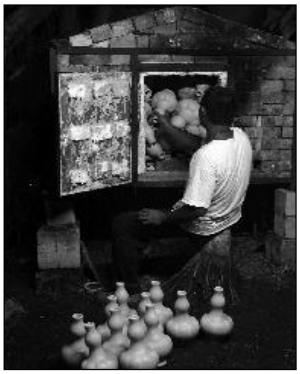
Picture 6 Labu Sayong slip casting

Picture 7 Burnishing the Labu Sayong

Picture 8 Burnishing

Picture 9 Decoration

Picture 10 Drying process



Picture 11 Firing

Picture 12 Reduction process

3.0 CONCLUSION

Undoubtedly the casting technology of Labu Sayong has brought some impacts on the aspects of scientific and equipment advancement. The knowledge of Malay entrepreneurs on technical skills has increased tremendously. They also succeeded in creating innovative decorating techniques. Furthermore, the use of various materials and resources is also in line with current situation. In conclusion, technology innovation in Labu Sayong manufacturing has attracted the attention and increases the number of new entrepreneurs who ventured into this field in the district of Sayong thus improving the socio-economic of Malay community.

Acknowledgement

This research was supported by Geran Galakan Penyelidik Muda [grant numbers GGPM-2012-077]; and CoE Berpotensi ATMA/Tinggi [grant number II/006/2013].

Notes

1. *Pandai labu* is a nickname for the expert who produced Labu Sayong using pinching technique.
2. *Plaster of Paris* is a *gypsum* stone processed into powder and also known as *gypsum plaster*.
3. *Trimming* is a model making technique using special tools to carve out the model slowly when the jolly jigger machine is in full speed.
4. *Template* is a thin piece of *plaster of Paris* used during the first mould piece making only. It functions as a wall to separate the left and right model. After the completion of the first mould piece, the template is not used anymore.
5. *Special soap is a type of palm oil grease.* It has a consistency of a gel or sometimes thinner. Boiled water is used on the model surface to get rid of the soap.
6. Grater is a tool to carve out the surface of the *plaster of Paris* to make it even and clean.

References

[1] Abd. Rahim Abd. Rashid. 2001. *Nilai-Nilai murni Dalam Pendidikan: Menghadapi Perubahan & Cabaran Alaf Baru*. Kuala Lumpur: Utusan Publications & Distributors Sdn Bhd.
[2] Ahmad, M. N. 2000. *Sekian Seramik.* Kuala Lumpur: Perbadanan Kemajuan Kraftangan Malaysia.
[3] Ainon Muhamad & Abdullah Hassan. 1995. *Kepintaran Daya Cipta dan Kemahiran Berfikir*. Kuala Lumpur: Utusan Publication & Distributors Sdn. Bhd.
[4] Ibrahim Darus & Sahaimi Manaf. 2005. *Tembikar Tradisional*. Kuala Lumpur: Perbadanan Kemajuan Kraftangan Malaysia.
[5] Jasiman Ahmad & Nora Hj. Samat. 2001. *Siri Ensiklopedia Kebudayaan: Kemahiran Seni Kraf.* Kuala Lumpur: Jade Green Publications Sdn. Bhd.
[6] Joe, T., John, B. and Keith, P. 2001. *Managing Innovation.* Chichester ,UK: John Wiley & sons Ltd.
[7] Mohd. Azhar Abd. Hamid, Mohd. Koharuddin Balwi & Muhamed Fauzi Othman. 2006. *Buku Reka Cipta & Inovasi dalam Perspektif Kreativiti.* Skudai: Penerbit Universiti Teknologi Malaysia Press.

[8] Mohamad Nazri Ahmad. 2000. *Siri Kraf Tangan: Tembikar & Tengkolok*. Selangor: Pustaka Mawar
[9] Othman Mohd. Yatim. 1979. *Keramik Asing Dalam Budaya Melayu*. Dewan Bahasa & Pustaka: Kuala Lumpur.
[10] Oxford Fajar. 2001. Advanced Leaner's English-Malay Dictionary (Asmah Haji Omar Terj.). Kuala Lumpur: Penerbit Fajar Bakti Sdn. Bhd.
[11] Sheppard, Tan Sri Mubin. 1972. *Taman Indera: Malay Decorative Arts and Pastimes*. Kuala Lumpur: Oxford University Press.
[12] Siti Zainon Ismail. 1982. *Cara Tradisi Membuat Labu Sayong*. Kuala Lumpur: Dewan Bahasa & Pustaka.
[13] Siti Zainon Ismail. 1986. *Reka Bentuk Kraftangan Melayu Tradisi*. Kuala Lumpur: Dewan Bahasa & Pustaka.
[14] Syed Ahmad Jamal. 1993. *Rupa & Jiwa*. Kuala Lumpur: Dewan Bahasa & Pustaka.
[15] Yusman Ayob & Mohamed Roselan Malek. 1995. *Kraftangan & Senibina Tradisional*. Petaling Jaya: Penerbit Prisma Sdn. Bhd.
[16] Zuta. 2001. Konvensyen Dunia Melayu Dunia Islam - Melayu Wajib Bersatu. Retrieved Januari 10, 2007 from http://www.geocities.com/zek_my/news1/ut439.html.