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Theme: ART RESEARCH, FINE ART, DESIGN,
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TITLE

GRATITUDE

This year marks the 65th anniversary of the School of Fine Arts and Technology, a school that has prepared visual artist, designers, and technology educators. We would like to give a warm greeting and note our gratitude to the educators, researchers, seniors, alumni, faculty members, and students, the thousands of graduates, and the domestic and foreign universities as well as organizations that are and have been in collaboration with us.

The last 60 plus years have been dedicated to developing and improving our post-graduate, transfer, and graduate curriculum to synchronize technology based training and production in order to prepare the best educators. For the next 60 years, our faculty are working towards preparing educators that are able, innovative, and talented individuals that have the ability to adapt and grow with the societal developments like the digital world, and the ability to professionally conduct online and offline.

Within this academic research academic journal, papers from educators, trainers, art researchers, and those with a Doctors degree under the topic of "Fine arts, design, and technology based education within the digital era" were accepted. The work of international and domestic researchers have focused on exchanging information, knowledge, and their experience to discuss methods of the methods being used to educate our students and youth on fine arts, design and technology within the digital era.

The "Fine arts, design, and technology" academic journal will be open and accepting to all those that devote their time, efforts, and knowledge to improving to the development of the education system. Thus, we would like to give our warm gratitude to the individuals that worked with us and included their research work within this academic journal.

May the great benefits of books be widely received.

The director of the School of Fine Arts and Technology, Doctor S.Battsooj

VALUE OF THE RESEARCH WORK SCIENTIST AND DOSENT OF GONCHIGDORJ B.

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Abstract

Gonchigdorj, associate professor of technical science, assistant professor of the Mongolian technical drawing department, who opened the door of the Mongolian technical drawing, was born on February 27, 1927, in the spring of the 16th jaran(60 years) year of the fire rabbit, in the 9th team of Darkhan Sum, Selenge aimag. If he was still alive, he would have lived to be 96 years old. In four years, the 100th anniversary of his birth will be celebrated.

In order to clarify the value of the drawings, sketches, training and research works for the training of labor teachers in MNUE by Gonchigdorj B., someone who dedicated his entire life for it, and an unassuming and humble scientist who made his mark in the development of Mongolian culture, art, science, technical drawing studies, and public enlightenment, earned the title of Associate Scientist of Technical Science with his work "Ancient Mongolian line art", the report is based on some important documents, books, and archives in connection with it.

Academician Avdai Ch.: Gonchigdorj B. is the first scientist to receive a degree in technical science in his country. At that time, there was no academic council for the earning of academic degrees in Technical science, he was the first one to establish the council and earn it.

Keywords:

Technical graphics, Illustration methods, Models, Modules, Facts, Illustrations, reviews

Content
1. Biography, and career and work history
2. Gonchigdorj B. on the holy path of science and research
3. Centennial value of some of his teaching and research works
4. Conclusion

Main part

One. Biography, and career and work history

Gonchigdorj Banzragch was born on February 27, 1927 in Baruunkharaa, 9th team of Darkhan sum, Selenge aimag. Family of three. His wife is Tsagaan D., associate scientist, associate professor, and his daughter is Khongorzul G.

- In 1937-1941, he was a student at Model Elementary School in Ulaanbaatar
- In 1941-1944, he was a student at secondary school No. 2 in Ulaanbaatar
- In 1944-1946, he was a student at the School of Teachers
- In 1946-1948, he was a teacher at secondary school No. 2 in Ulaanbaatar

- In 1948-1951, he was a teacher at the School of Teachers in Ulaanbaatar
- In 1951-1953, he was a teacher at the Central Secondary School of Khuvsgul aimag
- In 1953-1957, he was an inspector and head of department at the Ministry of Enlightenment
- He was a teacher at MNUE since February 1957
- In 1958-1962, he graduated from the art class of MNUE
- In 1962-1966, he was the head of the drawing and line drawing department
- In 1972-1976, he was the dean of the Faculty of Industry and Art
- In 1977-1988, he was a teacher at MNUE
- 1956.11.24. Honorary Labor Medal on the 35th anniversary of the Mongolian People's Revolution
- 1961.08.02. Medal of Honor for the 40th Anniversary of the People's Revolution by order of the Chairman of the People's Congress of the People's Republic of Mongolia
- 1981.07.09. He was awarded the Polar Order on the 60th anniversary of the People's Revolution.

Two. Gonchigdorj B. on the holy path of science and research
    The structure of the text «Ancient Mongolian Line Art» for which he earned the degree of associate scientist of technical science in 1978:

Introduction
    One. How to study the quality of technical charts and their development
    Two. The reason for studying the origin and development of Ancient Mongolian Line Art
    Three. Methodology of the research work

Chapter one. Methods of representation in ancient Mongolian paintings
    One. Pictures of ancient times
        1.1   Stone Age Imagery
        1.2   Metallurgical Age Imagery
        1.3   Exhibits of the Bronze department of the Central Museum

    Two. Pictures of the period of the ancient states of Mongolia
    2.1 Pre-planning of the construction
        2.2   The use of maps
        2.3   The use of astrology
        2.4   The use of drawings and models in handicrafts
    Three. Imagery methods in ancient Mongolian paintings

Chapter two. Research and conclusion of Ancient Mongolian technical drawing

    One. Geometric line drawings
        1.1   Technical drawing in general astronomy and mathematics
        1.2   Technical drawing of the construction of the God image
        1.3   Technical drawing of Mongolian geometric patterns

Two. Construction drawings
  2.1   Urban development drawings
  2.2   Building plan

Three. Materials drawings
Four. Map

Conclusion
Bibliography
It is a work with 120 pages of text and 93 pictures including APPENDIX PICTURES.

According to the contents of the dissertation, the scientific research work of teacher Gonchigdorj B. was one of the truly pioneering and significant works of Mongolian culture and art, technical graphics and technical drawing, which attracted the attention of global scientists in Mongolian studies.

<u>One fact.</u> His academic research work was led by Bira Sh., an internationally known scientist and academician, and Batsuuri d., a correspondent member of the Academy of Sciences, who considered it to be a scientific study of history.

This academic work of Gonchigdorj B. has become a research of special interest as it has discovered the elements of technical graphics used in modern times in Mongolian technical drawing. As the main source of the research that lasted for many years, he studied in detail the many types and purposes of paintings that have been created and used in Mongolia from ancient times until recently, and analyzed the geometric structure, discovered and proved that they used the principle of the golden section of technical graphics, symmetry, and various methods of rendering objects attracted the attention of the leading scientists of almost every field of science in our country at that time, and after repeated discussions, it was suggested that the research belongs to technical science rather than history. Therefore, by appointing additional leaders from technical scientists, re-establishing the composition of the academic council, and inviting famous scientists of the Soviet Union to participate, the scope of the research work has been expanded, and it has been going on for many years.

This research by teacher Gonchigdorj B. is of great value as it comes to the conclusion that «Mongolians have been using methods similar to technical charts in many ways since ancient times.» After discovering several features of Mongolian line art, some interesting ideas were put forward that are not lost, and some of them can be reused even now.

Another issue has been raised. That being the history of Mongolian technical drawing. His dissertation research method and order was carefully selected from the beginning, therefore it can be used to connect the Mongolian tribes that existed in Mongolia with the stage of development of the Mongolian nation and ethnic history, and in accordance with that chronological order, it has become a work that made a truly invaluable contribution to building the history of the development of painting, based on the documents that fully present the history of it.

Gonchigdorj B. possesses all the virtues of hard work, meticulousness and tireless effort that a researcher should have, and by fully learning the research methods of this field during his postgraduate studies, he is a truly experienced, knowledgeable and well-rounded researcher who can emerge from a special technical subject that he holds the degree of associate scientist.

One fact. On March 17, 1978, the meeting of the Academic Council of Physics-Technical and Mathematical Institutes, Institutes of Physics and Mathematics, and the Academic Council for Awarding Academic Degrees in Physics, Mathematics and Technical Drawing under NUM, discussed and defended the dissertation «Ancient Mongolian Line Drawing» for which B. Gonchigdorji was awarded the degree of associate scientist of technical science, «it is a comprehensive work covering the history, craftsmanship, technical thinking, education, culture, and ethnography of the Mongolians» and the precious historical documents and archives remain in the archives to tell us more and more clearly today. Quoting from the meeting notes from the council:

Sodnom N.. Director of NUM, President of Academy of Science, Honored Teacher and Academician of Mongolia. The founder of Mongolian physics, technical science and nuclear physics research. Chairman of the Council of Academic Degrees.

- When was the Dorjnupran temple painted? When was this church built?

Gonchigdorj B.: We believe that it is from the 18th century. This picture is also believed to be a picture painted before the construction of the temple.

Sodnom N.:

This wasn't painter later than that, right?

Gonchigdorj B.:

It seems no. Because there is a fact that the nature of the project is complete, and that people such as Archbishop Haidav also did the project of the High Maidar Temple. Comparing this picture with the material of the book about him, it was seen that there are many similarities.

Sodnom N.:

In your dissertation, it says, «If Mongolian line art had developed further, it would have become a unique type of line art than the current one.» What exactly is more unique than that?

Gonchigdorj B.:

The ancient Mongolian line drawing could not be developed based on geometry and was only left used in practice. If the basic principles of Mongolian line drawing are improved on the basis of modern art science, it is a method that can be used in research and practice, just like the modern Monj method. The unique aspect of this is that, if Monj G.'s method takes the face (facade) as the main condition, it is unique in that it overlaps other conditions on a horizontal plane.

Sodnom N.:

You've collected a lot of material here over the years. What is the main processing method used in this material?

Gonchigdorj B.:

The main material of our work is imagery. It has its own basic processing method. This is a graphical verification method with geometric construction. For example: I can mention my research method in Kidan shrine.

Sodnom N.:

Any dissertation is not just for writing and collecting things, but it must make practical recommendations. What practical recommendations did you get from your work?

Gonchigdorj B.:

In the dissertation, it was mentioned that there are things that can be used in modern engineering graphics in the ancient Mongolian technical drawing. There are now things that can use digits instead of schematics to display as identifiers. I also think that Mongolian painting can be further developed by using perception and perspective to express space.

Sodnom N.:

What can be selected and used by drawing departments of universities?

Gonchigdorj B.:

Currently, the technical curriculum of all levels of our schools, when considering the content of its historical development, has failed to reflect the historical aspects of Mongolian technical drawings. I think this work is important to eliminate this deficiency. Also, I believe that this unique method of Mongolian technical drawing can be a kind of method that can solve the location and size problems of points, lines, and planes in space.

Bazar G.:

People's and Honored Teacher of Mongolia, First Civil Engineer of Mongolia, Professor of MUST:

-Is there anything in the dissertation about locating border mounds on a map?

Gonchigdorj B.:

There is.

Shagdar Sh.:

Doctor of Science (Sc.D), professor, People's and Honored Teacher of Mongolia.

-Do you have the experience of getting a technical degree by studying ancient painting in the Soviet Union or other countries?

Gonchigdorj B.:

Studies that study the history of many branches of science, including technical sciences, follow their respective fields, even in the reference of SEV(rus.Совет Экономической Взаимопомощи, Organization of Economic Cooperation of Socialist Countries.). In the Soviet Union, the works on the history of technical drawing were awarded the degree of technical science, for example: «Technical drawing in the period of manufacture in ancient Russia» and «Research on the history of technical graphics in ancient Russia». There are also things that have been awarded degrees in physics and mathematics in research on the connection between technical drawing and geometry.

Tseveen Ts.:

Is there anything that has been applied experimentally from the ancient Mongolian technical drawing method? And why is there no mention of decorative arts?

Gonchigdorj B.: Currently, common standards are implemented, but standards are not permanent, they change and improve with the improvement and development of production and technology. But every time we make such a change, we get some good things, so some things we think about can be noticed. We haven't tested anything yet. However, there are experts' opinions that some of the ancient Mongolian technical drawing methods are suitable for such and such things. To answer that question, we have considered patterns only from a geometrical point of view. But the problem of decorative art belongs to art studies.

Khuukhenkhuu G.:

Honored Worker of Science of Mongolia, head of the Nuclear Physics Research Center under NUM, member of the Academic Council under the Nuclear Energy Commission, member of the Academic Council of JNIA in Dubna

-Mongolian technical drawings used to express the scale with module grid lines. Why were the pictures of some gods painted in such a large size?

Gonchigdorj B.:

Mongolian technical drawings used to express the scale with module grid lines. The questions and answers of the members of the Academic Council continued, saying that one square of the grid line on the map was used for 20-25 places.

One fact. Let's quote from the opinions of scientists who wrote official reviews on the dissertation of Gonchigdorj B. – some members of the Academic Council, and some representatives of related fields who participated in the conference.

Bazar G.:

Head of the Department of Building Construction of the BAF of NUM, who worked as an official critic, deputy scientist of technical sciences:

-Gonchigdorj B.'s dissertation is the first work to study the history of the origin and development of the ancient Mongolian line art, and give a conclusion from a systematic and theoretical point of view. Mongolia's ancient paintings are generally divided into three categories: «paintings left behind by ancient people, paintings of ancient Mongolian states, and paintings of Mongolians in the middle ages», which are correctly defined in relation to the development of labor and production. It has been proven by evidence that linear perspective, reverse perspective, and axonometric methods were used to express space in Mongolian paintings.

I fully agree with his analysis of ancient people's paintings and his conclusion that «the painting of that time was the beginning of the technical graphics industry.»

The dissertation was written at an appropriate theoretical level and became the first work that made a valuable contribution to the study of ancient Mongolian technical drawings.

Avdai Ch.:

The director of the Polytechnic Institute under the National University of Mongolia, who wrote the official review, is an associate scientist of technical sciences (now Hero of Labor of Mongolia, Honorable Teacher, Academician):

-Of course, the depiction of any physical object or real image by technical drawing did not develop in all countries at the same time and in the same way. Therefore, it is a valuable thing that will help and support in learning the good traditional ways of getting to know the historical and cultural heritage of our nation by scientifically

researching and evaluating the Mongolian tribes who have lived in our area since ancient times and until now, their work tools, livestock, idols, dwellings, and the way they used to mark their territory in relation to certain stages of history. This shows how useful and timely the subject of Gonchigdorj B.'s research work is.

Before that, there was no detailed study of how the geometric features of space are reflected in Mongolian paintings, so Gonchigdorj B.'s conclusion is actually something new, that proved by basing on certain materials, that Mongolian paintings used the subjective reflection, perceptive, and perspective methods of external space, which are the result of the reflection and realization of the human eye and brain.

As an official critic, he said that it would be appropriate to award Gonchigdorj B. the degree of associate scientist of technical science for the content and research method of the monograph written by Gonchigdorj B., noting that the familiarity with the relevant source materials and the correct conclusions made in order to write this work are important for the National Economy, history and culture studies of our country.

Baasanjav D.: Official Critic Associate Scientist of Physical and Mathematical Sciences:

-Pictures and illustrations, including line drawings, are very important documents for the study of the development of any people, especially the culture, because they contain the appearance of a people's life, customs, culture, and its level. In general, symbols and technical drawings have become popular languages of science and technology. Therefore, the government paid great attention to teaching children this language from an early age, and started teaching technical drawing lessons in special programs in secondary, higher and special vocational schools of our country. Gonchigdorj B. devoted this work to researching and elucidating when Mongolians used line drawing, in what fields of activity, in what form, and what methods of representation they used, and to relate the characteristics of ancient Mongolian technical drawing to the way of depiction in the East. In order to finish this work, he has used visual documents, monuments, material and spiritual works created by people, and literature related to Mongolian history, especially cultural history, which have been handed down from ancient times to the present.

With this work, Gonchigdorj B. is considered to have fully met the conditions for awarding him the degree of associate scientist of technical science.

Dalkhsuren B.: Associate scientist of physics and mathematics, one of the first Mongolian employees of the International Joint Institute for Nuclear Analysis (JNIA) in Dubna.

-Gonchigdorj is one of the leading teachers who has been working productively in public education institutions for many years. In addition to the educational work, he studied Mongolian painting, and its history, geometric features, and art related issues were considered. These issues are valid, and this first exploration of this untouched topic paves the way for further in-depth research.

Sanjjav D.: Doctor of Psychological Sciences (Sc.D), Professor

-Gonchigdorj B. reviewed the historical reports in detail, made conclusions and suggestions. This is one of the main characteristics of a researcher. He also collected a lot of documentary materials, analyzed them, developed the art of technical graphics, and came up with new ideas. This work has become an effective work covering many

scientific fields such as history, art, technology, and mathematics, and it has become an important work for educating future generations with patriotism, introducing them to the cultural heritage of the people.

Odon G.: National artist, MNUE teacher

-This dissertation is a first, and it is necessary for our art studies. As a result of this work, we have set the method of making characters in Mongolian technical drawings using the distance line as one main goal. We had a lot of unresolved issues with this topic. And I think this was solved by the work of Gonchigdorj B.. This beautiful conclusion is very useful for our art historians. I conclude that we have our own thing to build upon.

I think that this work has contributed a lot to the cultural fund of our country.

Batjargal B.: Doctor of Physics and Mathematics

-It is believed that this research conducted by Gonchigdorj B. has helped to form the basis for making a conclusion that will clarify the main issue. This time, the writing of the dissertation was quite good. What Gonchigdorj B. said and the pictures that he showed show the connection with the history of mathematics in a very brief way. This illustration is entirely mathematics.There are no images here that are not related to Mongolians' mathematical thinking. The documentary material presented here shows a lot of knowledge and thinking of the Mongolians in the very early and ancient times. It will be a reference material for future researchers and researchers of the next generation. This is the result of the work done by Gonchigdorj B.. This material has a lot to do with the teaching of ti, the theory of ratio and the theory of parallelism. Among them, there is something valuable for the development of national and global science. For example: There are a lot of things related to Mongolian traditional home relations, its math calculations and the production of Mongolian goods.

All this can be included in the international assessment. For example: The ratio of the golden section can be emphasized. And among them, there may be something useful in the process of doing things according to the national characteristics of the East. It was understood to me that Gonchigdorj B. has a lot of ideas and thoughts to continue his work. Gonchigdorj B. is interested in ancient astronomy and numerology and is studying foreign languages. I believe that he has the talent to create things in the future that are reliable.

Dodon G.: Scientist and professor of physics and mathematics

I know about the work done by Gonchigdorj B. from the reports that were presented at the academic meetings held at MNUE. The value of academic work should first be assessed on three things: at what level of academic work was done, what is new, and what it can provide in practice. It is obvious that this work was done at a high academic level based on a large number of materials.

Mongolia is a country with an ancient culture. It is connected with the value of its cultural heritage, and it is new that there were technical drawings in Mongolia, and they were brought out. Also, some of the heritage can be applied in practice, which is an important task for educating the future youth with patriotism and introducing them to the cultural heritage.

Chadraa B.: Nuclear physicist, Academician, President of Academy of Science.

First of all, Gonchigdorj B.'s writing is a welldone analysis and research material.

Based on these supporting materials, I think it is a good idea to categorize the history and characteristics of Mongolian drawings and put forward a lot of ideas based on this. Our academic staff believe that this is a major first work in this regard. Some art historians consider Mongolian paintings to be flat paintings without spatial expression. However, Gonchigdorj B. refuted this and proved that it represents space from many angles, and as a photography professional, he touched the subject for the first time and put forward a bold conclusion.

This work is the result of many years of tireless hard work, and especially in the last four years, it has been created through the harsh criticism of many experts. Physicists and mathematicians of our council made regressive and critical demands on the research that those with little passion for research would back in no time. But Gonchigdorj B. bravely went through all of that, showing the true nature of a researcher, discussing it after finishing the novel and I think it is important to acknowledge.

It is believed to be a worthy thesis for the degree of associate scientist in technical science, and the recommendation of the SEV issued in 1975 mentions that work of this nature should be awarded with a degree in its respective science.

Sodnom N.: Academician, Chairman of the Academic Council for the Earning of Academic Degrees

-Gonchigdorj B. is a hardworking person who has done a lot. A scientist should be a hard worker. Others said that a lot of material was collected and studied. He himself wrote in his dissertation, «It's like looking for a needle left in the grass.»

It is a work that greatly emphasized the cultural, scientific and artistic heritage of our country. Урлаг, шинжлэх ухаан хоёр бол үргэлж хамт явдаг. Therefore, important work was done in terms of art theory and mathematical theory. For example, the theoretical things here are interesting. Descriptive Geometry results came from practice.

Einstein said, «Geometry was originally a physical science related to practice, and then became a mathematical science with the advent of abstraction.» Gonchigdorj B. made the same conclusion in the scientific research work.

Also, Dambiinyam B., dean of the Faculty of Building Architecture of NUM, architect and honored constructor, Naidanjav P., head of the Department of Visual Geometry of NUM, Deleg D., head of the Department of Construction, Road Machinery and Equipment, technical science deputy scientist, professor Y.I. Koroev, head of the Fine Art Geometry Department of the Moscow Institute of Architecture and Design, who all carefully read the dissertation work of Gonchigdorj B., gave official opinions and conclusions.

Three. Centennial value of teaching and some research works

One fact. In the book dedicated to the historical anniversary of the School of Fine Arts and Technology, the Honored Teacher of Mongolia, the first graduate of the Art Department of MSUE, Associate Professor Yadamjav TS.:

Gonchigdorj Banzragch, Dorjnyam Badamjav, Odon Geleg are the «three cornerstones» that laid the foundation of our school. While working in the Ministry of Education, Gonchigdorj B. went to the Soviet Union in 1957 to study experience, he visited the Lenin State Teachers' Institute in Moscow and the Moscow Teachers' Insti-

tutes, learned about the fine arts teachers' training of drawing, labor, and brought with him curriculum plans and programs. Gonchigdorj wrote in his memoirs that in the late 1950s, when he asked to report how he fulfilled the three duties given by the Ministry, they told him to just write it down in a nonchalant manner. We were also told about it.

1. *It is a duty to fully master this profession.* He is one of the best experts in Mongolia who has mastered cartography, which is a technical language.

2. *Responsibility for effective research in this discipline.* Dissertations, books, textbooks, articles, and academic reports written by Gonchigdorj B. confirm that he is a great scientist. It will be a great blessing if the scientists who are the students of the next generation compile a volume of their teacher's works.

3. *Responsibility of filling in the gaps in the curriculum by taking the appropriate place of Descriptive Geometry in elementary schools.* Now, in the content structure of general education in our country, technical drawings has become one of the main subjects studied in grades 6-12 under the name of drawing . The concept of preparing specialists without studying drawing and the basics of computer graphic design has disappeared in universities and training centers that provide engineering and technical education. It is written that all these should be properly evaluated as the result of basic research and line drawing training started by Gonchigdorj B..

   One fact. Some of the books and textbooks written and published by scientist and docent Gonchigdorj B.:
   -Descriptive Geometry /Student's Guide 1963/
   -Textbook of technical drawing for middle school grades 6-7 /1971,1975/
   -Textbook of technical drawing for middle school grades 8 /1973,1976/
   -Textbook of technical drawing for middle school grades 9 /1974,1976/
   -Recommendations for the teaching method of the 8th grade technical drawing lesson /1972/
   -A method of teaching technical drawing /Handbook for Teachers, Co. 1984/ etc.
   To name from research and research articles:
   -Some problems of the history of Mongolian geographical drawings /Academy of Science news magazine, 1970/
   -In the problems of Mongolian Bronze Age pictorial research /1975/
   -The problem of spatial representation in Mongolian paintings /Fine Arts Magazine, 1977/
   -Observations on the geometrical structure of Mongolian chariots of the 13th century /Academic papers of MSUE, 1977/
   -On the issue of the influence of ancient Indian drawing /III International Congress of Mongolian Scientists, 1976/ etc., has written and published more than 50 books and reports.

Conclusion

The following conclusion was made based on this scientific research work of Gonchigdorj B. and other documents related to it.

1. According to the one-theme work «Ancient Mongolian Line Drawing» defended in 1978 by B. Gonchigdorj, who is an associate scientist of technical sciences, as well as related books, reports, opinions and conclusions of scientists, Gonchigdorj B. is not only a scientist who opened, raised and laid the foundations of the Mongolian cartography research, but also has a history of many science research such as technical graphics and technical drawing, mathematics, astronomy, history, archeology, architecture, anthropology, visual arts, cultural studies, geography, and it confirms the fact that he has done the base research that covers the issue of the knots between them that are closely connected, as he wrote, «like looking for a needle left in a haystack».

2. In the first chapter, «Illustrative methods in ancient Mongolian technical drawing «, the documents that have been written in detail about the painting methods of ancient times and ancient countries have laid the foundation for the dissemination of cultural studies and visual art studies at the international level. which gave birth to a lot of students under him, and they're continuing the work of him (namely: doctor (Sc.D) professor Batchuluun L., doctor Batchuluun S., Gotsbayar R., Odpurev G., Enkhtaivan Ch., Dashdavaa J., Ariunbold A., Bayartur G., Batsooj S. etc.) to expand it, but it is also emphasized that the source and value of our teacher's work is an increasingly important source for the further development of the study of the tangible and intangible cultural heritage, Mongolian painting, national crafts, technical graphics, and technical drawing to the world level.

3. It is clear that there are many things that can be further improved and passed on in the research findings of the ancient Mongolian technical drawings, and it is also clear that there is an opportunity to expand this research by revisiting and carefully studying the basic research works, as well as attracting the attention of young researchers.

4. Scientist and associate professor Gonchigdorj B., in addition to studying technical graphic-illustration methods historically, was one of the founders of the Higher Education School of Painting and Labor Teachers in 1958, together with State Honored People's Artist Odon G. and senior teacher Dorjnyam B., and currently, the School of Fine Arts and Technology is celebrating its 65th anniversary, and the first 30 years have been dedicated to improving the content and methods of Descriptive Geometry and Technical drawing, and learning the first translation (A. Abrikosov « Technical drawing» Book 1, 2, 1967, 1968), he wrote the first «Descriptive Geometry» textbook for university students and teachers in 1963, and the first « Technical drawing Teaching Method» in 1984, the book is still a valuable legacy of the School of Fine Arts and Technology.

5. I, a student of the scientist and associate professor Gonchigdorj B., received a doctorate (PhD) degree in 1994 and a doctorate of science degree in 2013 on the basis of base experiments and research in secondary school, after studying in depth the ideas written about models and modeling in the thesis, in order to continue the work of my teacher and maybe it's the result of his hard work.

6. Docent Gonchigdorj B.'s dissertation «Ancient Mongolian Technical draw-
    ing» is being prepared to get published as a book by me, to be circulated among
    researchers and teachers, and it's not only a gift for the 100th anniversary of
    his birth but also a good deed to forever engrave his work.
7. In the future, the scientists and teachers of our department will further expand
    the basic research aimed at the development of Mongolian cartography, and
    we have a big goal to bring the training of visual arts, design, and cartography
    to an international level.
8. It is time that we look back to the research of previous generations of
    scientists. Last summer, at the opening of the 12th International Conference
    of Mongolian Scientists on the theme of «Peace and Historical Experience
    of Mongolia», the president of the IMU Association, the famous Hungarian
    scientist Britlan Agnes, looked back at the works of older researchers, learned
    from them, quoted and proposed theories and methods in his research. It is a
    pleasure to mention here that young researchers should pay special attention
    to the study.
9. Not following the achievements of modern science, technology, education,
    cultural and artistic development, but taking into consideration that the
    intellectual and material conditions for a new stage of development with
    national characteristics have already been created in the future, we must
    develop the skills, talents and thinking of the 21st century – there is a need
    to support and develop education based on very rapid development. Because
    it has become the main mine to prepare teachers, educators and researchers
    with the knowledge and skills to realize the unique potential in the genes of
    every Mongolian child, and the work of professor Gonchigdorj B., who is
    not only the first one to earn a degree in technical science in MSUE but in
    his native land, has been reminding us and I am glad that from this honorable
    podium on the anniversary of his native school.

Thank you for your attention.

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ПРОБЛЕМЫ ТЕХНОЛОГИЧЕСКОГО ОБРАЗОВАНИЯ ШКОЛЬНИКОВ В РОССИЙСКОЙ ФЕДЕРАЦИИ

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Аннотация

В статье рассматривается эволюция содержания технологического образования школьников в Российской Федерации с момента разработки концепции в 1992 г. по настоящее время и проблем трудового воспитания школьников в рамках технологического образования.

Ключевые слова:

Технология, Технологическое образование, Технологическая культура, Всероссийская олимпиада школьников по технологии, Трудовое воспитание.

Технологическое развитие нашей страны требует подготовки большого количества высококвалифицированных инженерных и технических кадров. В Послании Президента Российской Федерации В.В.Путина Федеральному собранию 21 февраля 2023 года говорится: « Отмечается колоссальный спрос на выпускников колледжей и техникумов. Задача конкретная -за ближайшие 5 лет подготовить порядка миллиона специалистов рабочих профессий для электронной промышленности, индустрии   робототехники,машиностроения,металлургии,,фармацевтики,сельского хозяйства и ОПК, строительства, транспорта, атомной и других отраслей.

Отмечается также нехватка инженерных кадров. Выступая 3 февраля 2023 года в Рыбинске, секретарь Совбеза РФ Н.П. Патрушев отметил, что только авиапрому не хватает свыше 14000 инженеров, конструкторов и технологов, что свидетельствует о провалах в подготовке кадров в прошлые годы.

Важную роль в профориентации молодежи на дальнейшую работу в технологической сфере играет предметная область « Технология», которая является наследницей предмета « Труд» в советской школе.

Трудовое обучение в советской школе включало два важных компонента, которые вошли в содержание технологического образования школьников в Российской школе:

1. Изучение материальных технологий — технологий обработки и использования древесины, металла, ткани, пищевых продуктов и электроэнергии.

2. Вариативность подготовки программы трудового обучения по направлениям: для городских школ — технический труд и обслуживающий труд и сельский труд для сельских школ.

Были созданы межшкольные учебно-производственные комбинаты(УПК) для трудового обучения школьников близлежащих к УПК школ..

В 1992 г. по предложению Министерства просвещения РФ на кафедре общетехнических дисциплин Московского педагогического государственного университета стал работать временный трудовой коллектив «Технология» (ответственный исполнитель Ю.Л Хотунцев).

Были разработаны концепция и программа нового предмета (предметной области) «Технология». Концепция предполагала политехническое образование школьников, использование материальных и информационных технологий в процессе обучения ,вариативность изучения « Технологии» и творческое развитие учащихся. Программа «Технология» издавалась с 1996 по 2010 год. В программе сохранились два направления «Техника и техническое творчество» и «Культура дома и декоративно-прикладное творчество», соответствующие «Техническому труду» и «Обслуживающему труду» программы трудового обучения. Хотя в настоящее время раздаются голоса, предлагающие изучать «Технологию по единой программе, большинство специалистов в нашей стране считают целесообразным сохранение вариативности, тем более если учесть целесообразное различие программ «Технология» в городской и сельской школе.

В программу «Технология» были включены разделы: технологии обработки конструкционных материалов и элементы машиноведения, культуры дома, технологии обработки ткани и пищевых продуктов, художественная обработка материалов, строительно-отделочные работы, электронные технологии (электротехника, радиоэлектроника, автоматика), информационные технологии, графика, отрасли общественного производства и профессиональное самоопределение, производство и окружающая среда, элементы домашней экономики и основы предпринимательства, техническое творчество, введение в художественное конструирование. Впервые после запрета постановлением ЦК ВКП(б) школьных проектов в программу «Технология» было включено выполнение проектов со 2 по 11 классы. На выполнение проектов выделялась четвертая четверть в каждом классе.

В 1993 г. новый предмет был включен в Базисный учебный план общеобразовательных учреждений РФ На его изучение выделялось 2 часа в неделю с 1по 7 классы,3 часа-в 8 и 9 классе и 2 часа в 10 и11 классах. В Базисном учебном плане 1998. г. на изучение технологии выделялось по 2 часа в неделю с 1 по 8 классе и в 10-11 классе, в 9 классе — 3 часа в неделю. В Базисном учебном плане РФ 2004 на изучение «Технологии» выделялось по 1 часу в неделю с 1по 4 класса, 2 часа- в 5-7 классах и 1 час — в 8 классе, в 9-11 классах «Технология» - предмет по выбору .Это ограничило возможности технологического и творческого развития и профориентации учащихся на технологические направления дальнейшего обучения в условиях нехватки кадров для развития экономики страны.

В Примерной основной образовательной программе основного общего образования (в редакции 04.02.2021) на изучение «Технологии» рекомендуется выделять 2 часа в неделю с 5 по 7 классы и 1 час в 8 и 9 классах.

31 мая 2021 г. был подписан приказ Министерства просвещения РФ №287 «Об учреждении Федерального государственного образовательного стандарта основного общего образования (ФГОС ООО) [1].

В разделе 37.10 сформулированы предметные результаты по технологии. Они должны обеспечивать:

1) сформированность целостного представления о техносфере, сущности технологической культуры и культуры труда; осознание роли техники и технологий для прогрессивного развития общества; понимание социальных и экологических последствий развития технологий промышленного и сельскохозяйственного производства, энергетики и транспорта;

2) сформированность представлений о современном уровне развития технологий и понимания трендов технологического развития, в том числе в сфере цифровых технологий и искуственного интеллекта, робототизированных систем, ресурсосберегающей энергетики и другим приоритетным направлениям научно-технического развития Российской Федерации: овладение основами анализа закономерностей развития технологий и навыками синтеза новых технологических решений;

3) овладение методами учебно- исследовательской и проектной деятельности, решения творческих задач, моделирования, конструирования и эстетического оформления изделий, обеспечения сохранности продуктов труда;

4) овладение средствами и формами графического выполнения графической документации;

5) сформированность умений устанавливать взаимосвязь знаний по разным учебным предметам для решения прикладных учебных задач;

6) сформированность умений применять технологии представления, преобразования и использования информации, оценивать возможности и области применения средств и инструментов ИКТ в современном производстве или сфере обслуживания;

7) сформированность представлений о мире профессий, связанных с изучаемыми технологиями, их востребованностью на рынке труда.

Достижение результатов освоения программы основного общего образования обеспечивается посредством включения в указанную программу предметных результатов освоения модулей учебного предмета «Технология», организация вправе самостоятельно определять последовательности модулей и количество часов для освоения обучающимися модулей учебного предмета «Технология» (с учетом возможностей материально- технической базы Организации).

25 августа 2022 года решением Федерального учебно-методического объединения по общему образованию одобрена Примерная рабочая программа основного общего образования « Технология», разработанная группой специалистов по информатике во главе с проф. С.А.Бешенковым.

Программа содержит инвариантные модули:

« Производство и технология»

« Технологии обработки материалов и пищевых продуктов»

« Робототехника»

« 3D-моделирование, прототипирование, макетирование»

« Компьютерная графика, черчение»

И вариативные модули.

« Автоматизированные системы»

« Животноводство»

« Растениеводство»

Производство и использование электрической энергии-основы современной цивилизации-изучается в вариативном модуле « Автоматизированные системы»,т.е. не всеми школьниками.

Изучение домашней экономики и основ предпринимательства входит только в вариативный модуль « Автоматизированные системы»

6 сентября 2022 года был подписан приказ Минпросвещения России № 804 « Об утверждении перечня средств обучения и воспитания, соответствующих современным условиям обучения, необходимых при оснащении общеобразовательных организаций «,в котором говорится,что кабинет технологии содержит:

Часть 1 Домоводство(крайка и шитьё)

Часть 2 Домоводство (кулинария)

Часть 3.Слесарное дело

Часть 4. Столярное дело

Часть 5 Универсальная мастерская работы с деревом, металлом и выполнения проектных работ школьников (на базе кабинета технологии для мальчиков),включающая станки с ЧПУ и 3 D -принтер,

а также Профильный инженерно-технологический класс с 3D-принтерами, роботами, квадрокоптерами и аппаратурой виртуальной реальности.

Отсутствует аппаратура для изучения электротехники, электроники и автоматики.

В последние годы большое внимание уделяется введению в предметную область «Технология» робототехники, 3D-станков с ЧПУ, создаются образовательные центры «Кванториумы» и «Точки роста».В 2022 году в нашей стране были созданы 13000 « Точек роста» и 300 « Кванториумов»

Важно при этом сохранить в предметной области «Технология» материальные технологии (ручной труд), формирующие материалистическое мышление учащихся и позволяющие овладеть жизненно-полезными навыками.

Уже в концепции формирования технологической культуры молодежи в общеобразовательной школе 1999 г. [2] отмечалось, что особое место в проектировании содержания предметной области «Технология» занял вопрос о сохранении в содержании ручного труда (материальных технологий). Противники этого указывали, что в производстве ручной труд прогрессивно вытесняется механизированным. Однако введение ручного труда необходимого совсем в другой логике – логике развития личности. Кроме того, экспериментально доказано, что в ручном труде (особенно у дошкольников и младших школьников) активно развивается мелкая моторика рук, жизненно важная для формирования функций мышления. Наконец можно сказать, что навыки ручного труда ещё долгое время будут необходимы и профессионалу(особенно часто в экстремальных ситуациях) и просто в быту, в семейном «разделении труда». Современную школу справедливо упрекают в том, что она выпускает «безрукое» поколение.

Освоение материальных технологий обучающимися формирует их

материалистическое, проектно-технологическое мышление и технологическую культуру, позволяя им принять активное участие в реализации технологического процесса создания изделий, почувствовать сопротивление материала, получить практические знания и умения, полезные в повседневной жизни. Это определяет принципиальную необходимость освоение материальных технологий в школе. Материальные технологии используются при создании проектов на Всероссийской олимпиаде школьников по технологии и при проведении конкурсов рабочих профессий Worldskills и Juniorskills. Однако изучение материальных технологий требует материального обеспечения: учебного оборудования, материалов и квалифицированных педагогических кадров. Это создает трудности реализации материальных технологий при отсутствии финансирования и во многих случаях вынуждает ограничить или отказаться от изучения материальных технологий в школе и сосредоточиться на изучении информационных технологий в ущерб технологическому образованию обучающихся.

Одним из инструментов для реализации материальных технологий являются информационные технологии, которые в последние года приобрели большое значение в связи с развитием вычислительной техники. Информационные технологии необходимы при программировании современных технических устройств: станков, швейных машин, конвеерных линий, роботов, 3D-принтеров и т.п. При выполнении проектов информационные технологии позволяют найти прототипы проектного изделия, выбрать оптимальное решение создания проекта, оформить чертежи, рисунки и пояснительную записку проекта.

Важную роль в деятельности всей школы играет трудовое воспитание.

Государственная Дума РФ обсуждает вопрос о введении трудового воспитания в школу(« Известия»,12.1.2023).В Государственной Думе РФ 13 февраля 2023 года провела круглый стол « Трудовое воспитание в школе»

Если предмет «Технология» в первую очередь даёт технологические знания, умения, компетенции, то трудовое воспитание формирует позитивное, уважительное, заинтересованное отношение к различным видам трудовой деятельности на всех уроках и во внеурочной деятельности. Уже учеба – занятия в школе и дома – есть труд. На уроках «Технологии» трудовая деятельность связана в первую очередь с созданием материальных ценностей, в частности при выполнении творческих проектов, и школьников надо заинтересовать в этой деятельности при создании бесплатных проектов в первую очередь для детских садов ,школ, больных и престарелых, однако трудовая деятельность не должна ослаблять политехническое образование и творческое развитие учащихся ….. Для этого можно использовать часы внеклассной работы.

В школе ,в частности, трудовой деятельностью является волонтерская работа.

В нашей стране кипит активная жизнь в области технологического образования. Проводится много конференций по проблемам этого образования . В прошлом учебном году 21-24 ноября 2022 года МПГУ и МГТУ им.Н.Э.Баумана провели XXVIII Международную научно-практическую конференцию « Современное технологическое образование».

1-2 марта 2023 года МПГУ провел IX Международную научно-практическую

конференцию « Физико-математическое и технологическое образование: проблемы и перспективы развития »

2 марта 2023 года Ишимский филиал Тюменского государственного университета провел конференцию « Проблемы и перспективы технологического образования в России и за рубежом ».

!4-15 марта 2023 года Тульский государственный педагогический университет им. Л. Н. Толстого провел XX Всероссийскую научно- практическую конференцию « Технолого-экономическое образование: достижения, инновации ,перспективы»

Декада естественно-научного и технологического образования прошла в Москве и Санкт-Петербурге с 28 марта по 7 апреля этого года.

В РГПУ им. А.И .Герцена 28-30 марта 2023 года прошла Всероссийская научно-практическая конференция с международным участием « Технологическое образование : теория и инновационные практики/ к 45 .летнему юбилею кафедры технологического образования РГПУ им.А.И.Герцена«

VII Всероссийская научно- практическая конференция « Технологическое образование в системе « Школа-колледж- вуз»: традиции и инновации» прошла 30 марта 2023 года в Воронежском государственном педагогическом университете.

25 апреля этого года была проведена Уральская школа учителей технолгии

В настоящее время готовится XXIX Международная научно-практическая конференция « Современное технологическое образование», которую мы проведем 20-22 ноября этого года

Приглашаю вас присылать материалы для публикации в материалах нашей конференции

Ежегодно с 2000 года проводятся Всероссийские олимпиады школьников по технологии, включающие школьный, муниципальный, региональный и заключительный этапы и охватывающие десятки тысяч школьников.

18 апреля 2022 г. Министерство юстиции Российской Федерации зарегистрировало нашу Межрегиональную ассоциацию технологического образования.

Цели и задачи ассоциации:

1.Объединение усилий граждан и юридических лиц в деле формирования у широкого круга специалистов, в том числе у общественности ,представителей органов государственной власти и местного самоуправления,понимания важности и необходимости развития и совершенствования технологического образования,в первую очередь школьников.

2.Консолидация сил учителей, преподавателей и всех желающих в целях формирования у школьников и других обучающихся интереса к технологическому образованию.

3.Создание единого информационного пространства,необходимого для распространения в профессиональном сообществе современных и перспективных производственных и педагогических технологий и их апробация.

4. Поддержание и развитие российского технологического образования.

5.Содействие укреплению мира, дружбы, взаимопонимания в многонациональном и этнокультурном пространстве Российской Федерации,

сотрудничества с национальными ,региональными и международными организациями технологического образования.

Подготовлен сайт ассоциации. Он включает:

1)Документы о создании ассоциации.

2)Последние официальные документы о технологическом образовании школьников: концепция ,программа, материальное обеспечение, федеральный перечень учебников.

3.Информация о последних методических мероприятиях;

4.Материалы последних конференций, проведенных в разных городах РФ.

5.Решение последней XXVIII конференции « Современное технологическое образование»

6.Планируемые мероприятия по технологическому образованию, в частности XIX научно-практической конференции « Русская культура в предметной области» Технология».

7.Учебно-методическое обеспечение « Технологии».

Информация о сотрудничестве с другими организациями.

Заключены договора о сотрудничестве с Ассоциацией технических университетов и с Национальным союзом предприятий учебного оборудования и средств обучения и поставщиков образовательных организаций. Наша ассоциация вступила в Российский союз научных и инженерных общественных объединений (РосНИО)

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Приглашаю ваш университет заключить с нашей ассоциацией договор о сотрудничестве для обмена информацией о технологическом образовании и подготовке учителей технологии.

Было бы целесообразно нашей ассоциации совместно с другими технологическими ассоциациями издавать журнал « Технологическое образование», который выходил бы в электронном виде раз в 2 месяца..

Для совершенствования технологического образования школьников и подготовки учителей технологии в нашей стране наша XXVIII Международной научно- практической конференция «Современное технологическое образование» 2022 года, приняла следующее решение ,которое передано в Министерство просвещение РФ

Просить Министерство просвещения Российской Федерации:

1 Дать указание Федеральному учебно-методическому объединению (ФУМО) по общему образованию выделить часы на изучение предмета «Технология» в старшей школе, в первую очередь для профориентации учащихся.. Обеспечить непрерывность изучения предмета «Технология» с 1 по 11 класс.

2 Поручить руководителям системы образования регионов проанализировать и обеспечить потребности школ в квалифицированных учителях технологии и скорректировать планы приема в вузы по профилю «Технология»; обратить их внимание на необходимость непрерывного повышения квалификации преподавателей предмета «Технология» в очной форме. Рассмотреть вопрос о

переподготовке уходящих в отставку офицеров с техническим образованием для работы учителями технологии в школе. В 2022/2023 учебном году в 39440 школах Российской Федерации трудятся 43821 учитель технологии (20% старше 60 лет), а должно быть 79000.

3 Оценить состояние материальной базы общеобразовательных организаций для изучения предмета «Технология» и обеспечить школы новым отечественным оборудованием в соответствии с приказом Минпросвещения России от 6 сентября 2022 года №804. Минпросвещения России через свои уполномоченные организации установить тесные взаимоотношения с ведущими организациями Национального союза предприятий индустрии учебного оборудования и средств обучения и поставщиков образовательных организаций с одновременной организацией обучения и повышения квалификации преподавателей.

Дополнить приказ № 804 перечнем оборудования для изучения на уроках технологии в рамках основного общего образования электротехники , радиоэлектроники , автоматики и станков с ЧПУ..

Было бы полезно дополнять решения конференций по технологическому образованию ,которые проводятся в нашей стране, . предложениями по совершенствованию этого образования.

Отсутствие часов на изучение «Технологии» в старших классах, недостаточного материального оснащения многих из 39440 общеобразовательных школ Российской Федерации, недостаточное количество квалифицированных учителей технологии-все это создает проблемы для реализации необходимого технологического образования и трудового воспитания молодежи.

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PROBLEMS OF TECHNOLOGICAL EDUCATION OF SCHOOL-CHILDREN IN RUSSION FEDERATION
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Abstract

The article examines the evolution of the content of technological education of schoolchildren in the Russian Federation since the development of the concept in 1992. to date, and the problems of labor education of schoolchildren in the framework of technological education.

Keywords:

Technology, technological education, technological culture, All-Russian Olympiad of schoolchildren in technology, labor education.

THE IMPLEMENTATION OF THE CDIO APPROACH IN THE DESIGN & TECHNOLOGY TEACHER (TDT) PROGRAMME
/Mapping, Enhancing, Innovating & Sustaining/

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Abstract

The paper aims to present some experiments to implement the CDIO approach in the Design and Technology Teacher program, show how they can be applied in practice, and discuss associated benefits and challenges. The CDIO approach has been successfully used in the design of integrated engineering technology curricula worldwide. CDIO-based curriculum reform can be overwhelming when universities need more experience in consolidating curricula that integrate disciplinary knowledge with engineering skills.

This paper addresses the process of curriculum development. Our experience in revising curricula and implementing the CDIO approach reported here will provide a set of guidelines that can be replicated, tailored and used by other MNUE departments and other institutions of Mongolia.

Keywords:

Curriculum design, Future graduate attribute, Current student persona, Curriculum design

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Introduction

The CDIO approach has been successfully applied to the design of integrated engineering technology curricula worldwide. CDIO based curriculum reform can result in an overwhelming process where universities lack experience in consolidating curricula that integrate disciplinary knowledge with engineering skills.

The Ministry of Education, Culture, and Science (MECS) of Mongolia established minimum requirements for the undergraduate study program in 2014. All public and private universities had to reform their undergraduate study programs to meet the general needs and directions set by MECS. The MNUE, the most significant public university, has been working to improve the whole educational system, including innovation of curriculum, training of faculty and establishing new training facilities and environments since 2015.

In the scope of a higher education reform project funded by an Asian Development Bank loan and cooperation with MECS of Mongolia Singapore Temasek Foundation and Singapore Polytechnic, more than 100 teachers from 6 State public Universities attended 5 component training courses about CDIO standards in the 2018-2019 academic year and 26 of them selected as national master trainers.

Since the 2018-2019 academic year, The Department of Technology of the Mon-

golian National University of Education (MNUE) has been working on curriculum reform and the implementation of the CDIO approach for the Design and Technology Teacher program (DTTP).

Implementation of outcome-based education using a CDIO based approach

The CDIO is a new standard and process that is based on the theory and methodology of outcome-based education. It was first used for engineering technology programs. However, nowadays, it is used for many different programs in several universities, such as engineering, economy, and management.

In 2015, the outcome-based program principles developed a new program for Design and Technology teachers. Although the program's structure and design have been created as per the principles of outcome–based programs, some renewal is necessary. For example, we can:

Develop the future skills of graduates in the period of Industry 4.0 and the 21st century and reflect on the program. Include the needs and expectations of other stakeholders in determining the learning outcome of the program. Goals to consider are

- Improving the methodology for assessing program outcomes
- Refining the content and methods of the curriculum
- Enhancing, and improving the learning environment of student-centred learning.

We have started working with key stakeholders to identify the demand from the labour market and we have defined Program Educational Objectives (PEOs), and Program Learning Outcomes (PLOs). The process continued with the selection of required courses, the mapping of the PLOs to the PEOs of the program and the relation between courses in curriculum and PEOs, and PLOs. We evaluate learning outcomes or achievement levels of student knowledge, skills, and attitudes as a result of the teaching and learning process by the theory and methodology of outcome-based education, and course content is not the main focus area of this methodology.

We proposed that the following processes define program learning outcomes:

The university's strategic plan, vision, and mission statements, including development trends, should be revised.

Each university school should revise its vision and mission statement in line with the university's strategic planning.

Each school department should revise its vision and mission statements as well.

To define a Program's Educational Objectives as per the results of surveys taken from employers and graduates.

Program Learning Outcomes should be defined based on PEOs of the program. Defined PLOs must be consistent with the CDIO syllabus and national and international accreditation criteria and confirmed by surveys taken from employers and graduates.

Revision of program outcomes

To implement the CDIO approach, we have defined the Future Graduate Attributes of the Design and Technology Teacher (DTT) programme.

- Innovate Thinking
- Implementation Thinking

- Curiosity
- Empathy
- Fabrication skill
- Digital Fabrication

Based on Future Graduate Attributes, we identified the CDIO skills to be included in the Design & Technology Teacher (DTT) program. Table 1 shows a relationship between the CDIO syllabus and Future Graduate Attributes to the Design & Technology Teacher (DTT) program.

Table 1. The relation between between CDIO syllabus and Future Graduate Attributes to the Design & Technology Teacher (DTT) programme.

Mapping CDIO Skills with the Desired Future Graduate Attributes

Name of Programme/Course:	Bachelor in Teacher of Design and Technology
Name of University:	Mongolian National University of Education
Submitted by:	Team 3

S/N	CDIO SYLLABUS (SKILL SETS)	DESIRED GRADUATE ATTRIBUTES					
		Innovate Thinking	Implementation Thinking	Curiosity	Empathy	Communication Skill	Fabrication skill
2.1	Engineering Reasoning And Problem Solving						
2.2	Experimentation And Knowledge Discovery						
2.3	System Thinking						
2.4	Personal Skills And Attitudes						
2.5	Professional Skills And Attitudes						
3.1	Teamwork						
3.2	Communications						
3.3	Foreign Languages						
4.4	Designing						
4.5	Implementing						
4.6	Operating						
4.7	Leadership						

Based on Future Graduate Attributes we have define learning outcomes and then reform a curriculum according to the learning outcomes.

In Industry 4.0, the content, teaching and learning approach, evaluation, and learning space of the Design and Technology teacher program are focused on the development of Technology-based, 21st Century human competencies.

A teacher of the Design technology should have the academic knowledge and skills about Teaching and Learning process. Therefore, the Learning Outcomes (PLO) of the Design Technology Teacher Program were determined by the structure of individual knowledge, abilities, and attitudes, teacher education knowledge, abilities, and attitudes, and professional academic knowledge, abilities, and attitudes. The learning outcomes of the program or the knowledge, abilities, and attitudes to be acquired through the program are aimed at ensuring the development of each student, and each lesson is developed in close connection with the knowledge, abilities, and attitudes of the students.

The curiculum design of the Design and Technology student-teacher program
For identify the student's deep and uncover needs we had conduct five students interviews on Oct 2018, and develop the Current Student Persona. A common role for a student in the Design Technology Teacher program is:
- They come from rural areas to study and live in boarding houses.
- Willing to become a good teacher.

- Interested in continuing to study abroad, comparing and testing skills, and needing to learn a foreign language
- Want to study in good learning environment that is fully equipped with ICT and provides opportunities for teamwork.
- Earning a small amount of income using crafting skill and talent.

Picture 1. Current Student Persona of the Design and Technology Teacher program

Based on research on STEEP analyses of future trends, current student persona, research from employers and program stakeholders, and a comparative study of similar programs in some countries, the curriculum design of the Design Technology Teacher program was developed.

Design technology teacher's program adheres to the principle of result-based education, provides coherence and continuity between subjects, has a unified structure, and is implemented in close connection with teaching and industrial practice activities.

In addition to traditional teaching methods, e-learning and blended learning methods have been adopted, and the learning and teaching methodology, learning environment have been planned and updated.

Picture 2. The curriculum design of the Design and technology teacher's program
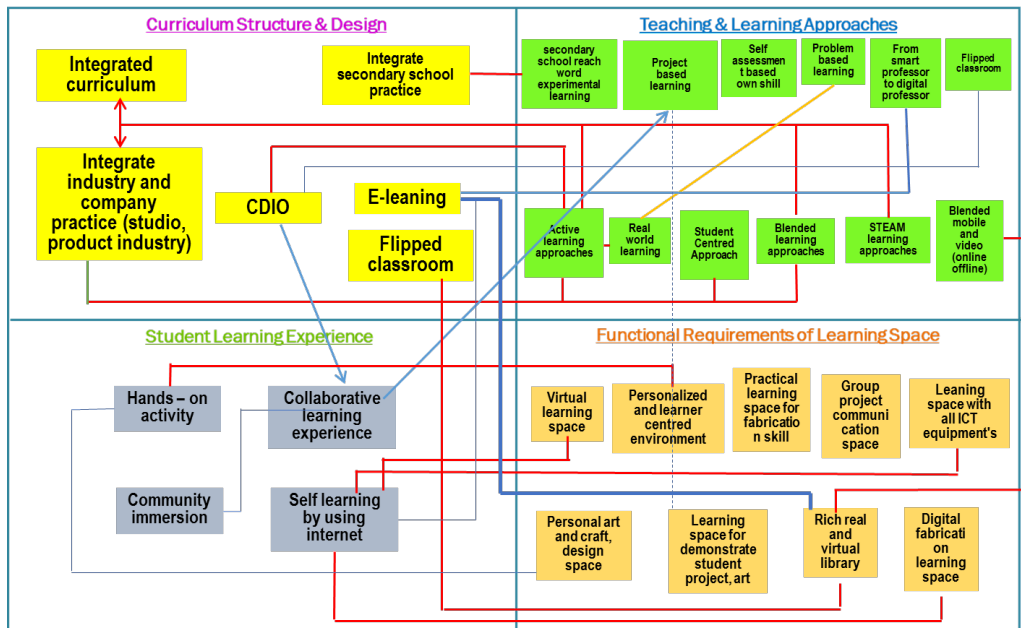
The curriculum is the key document which describes the general learning structure, learning content, the scope of the curriculum, list of offering courses and their content extent, sequence, and practical training type, demonstrating how to provide the education service to the students and achieve the attainment of program learning outcomes.

Incorporation of community engagement as teaching and learning activity. Adopted Practice-Based and Project-Based Learning for several subjects, supported by the following modes of delivery:
- Flipped classroom,
- Team-based learning,
- Role-Play
- Online, Mobile & Blended Learning
- Team Teaching
- Project-based learning

In order to provide CDIO skillsets, the Multi-disciplinary and inter-program projects have introduced and gained the experience.

Conclusions
1. In order to implement Outcome-based education, we have designed the curriculum of the undergraduate program consistent with CDIO standards and a constructive alignment model focused on learning outcomes, learning activities and assessment of learning outcomes.
2. The CDIO framework provided DTTP with a structured approach to enhance the design of our programs to better prepare students for professional work.
3. The CDIO implementation at DTTP has been strongly connected to faculty

member's competence development.

4. Enhancing the use of active teaching and learning methods (Standard 8) Overcoming faculty resistance to teaching skills outside of their subject speciality was the major challenge that the programs experienced when implementing CDIO.

5. Our experience with revising undergraduate curricula and implementing the CDIO approach reported in this paper can be used as guidelines in other departments of MNUE and other institutions in Mongolia.

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THE APPLICATION OF EXAGGERATION TECHNIQUES IN SCULPTURE CREATION

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Abstract

With the continuous advancement of technology, various aspects of life are undergoing rapid innovation and improvement. Sculpture is no exception, and its forms of expression have diversified, becoming more liberated. Exaggeration is a commonly employed technique in sculpture, known for its undeniable vitality and increasingly captivating appeal. The techniques used and the intrinsic meanings in sculpture artworks are closely intertwined. In the creative process of sculpture art, the application of techniques directly or indirectly influences the composition of the sculpture and the formation of its concepts. The exaggeration technique consciously emphasizes and accentuates the aesthetic features of the artist's creation in sculpture, making it more emotionally compelling.

Keywords:

Sculpture art, Exaggeration technique

The Use of Exaggeration in Artistic Expression

"Exaggeration, rooted in beauty, stands as the core principle of decorative aesthetics, especially in the realm of decorative sculpture. Exaggeration is the deliberate emphasis on and accentuation of the imagery and beauty of an artist's creation, rendering it more emotionally resonant."

Exaggeration, as one of the most significant methods in decorative sculpture, has a long history. For instance, the Venus of Willendorf, a fertility goddess dating back to the Paleolithic era, notably exaggerates her breasts, hips, and abdomen, effectively conveying the goddess's robust reproductive capabilities. Similarly, in Buddhist art, the exaggeration of forms and intricate compositions serves to underscore the utmost reverence for religious beliefs and the mystique surrounding them. Whether it's the muscularity of Han brick horses or the sheer power depicted in cave art figures, exaggeration has been an indispensable language in sculpture throughout history, used to accentuate themes and beauty.

The forms of exaggeration techniques in sculpture art creation are diverse. Exaggeration's expressive technique is indispensable throughout the history of art. When an artist consciously applies exaggeration techniques in their creative and practice processes, it enriches the artistic language and content of their works. Many artists have different understandings and applications of exaggeration techniques to showcase the unique artistic charm and profound emotional appeal of their works. In oil painting artworks, exaggeration techniques take the form of intense, vivid pure colors, irregular

structures, and arbitrarily distorted outlines. Sometimes, the proportions of figures in the image are distorted, or expressions that would never occur in real life are depicted, entirely stemming from the artist's imagination. However, the sensations conveyed by this exaggeration differ from realistic works. Perhaps one can gain a different kind of feeling from artworks that use exaggeration techniques, which is the unique artistic charm of exaggeration.

Exaggeration is one of the most potent means of artistic deformation, employed in literature, painting, sculpture, and even dance. Artistic works, whether written or three-dimensional, aim to express the author's viewpoint, perspective, and consciousness. Exaggeration techniques happen to highlight the imagery the author wants to convey and the emotions they want to express, elevating the author's intended thoughts. As writer Gorky pointed out, "Exaggeration is a fundamental principle of creation." Through the use of exaggeration techniques, the essence of things can be more vividly and distinctly portrayed, enhancing the artistic effect of the work.

In the context of sculpture, exaggeration aims to highlight the unique personalities and characteristics that are not easily discernible under normal circumstances by employing deliberate, exaggerated methods of representation. This approach provides the audience with a novel, personalized, and unique aesthetic experience. Exaggeration techniques in sculpture inject a strong emotional color into the artistic beauty of the work, making sculpture artworks distinct, prominent, and profoundly impactful. Therefore, exaggeration techniques are an effective means of conveying thoughts and emotions in sculpture creation. In sculpture creation, achieving "divine resemblance" is more challenging than "physical resemblance," and the application of exaggeration techniques is essential to reach the realm of "divine form combined with physical resemblance."

The Use of Exaggeration in Sculpture Creation to Shape "Iconic" Figures
In the realms of art, be it painting, sculpture, dance, or even literature, artists have consistently turned to the technique of exaggeration, giving rise to a multitude of remarkable artworks. In this context, let's explore the sculptural works of Russian artist Dashi Namdakov. Born in 1967, Dashi Namdakov is a multifaceted Russian talent encompassing the roles of sculptor, painter, and jewelry designer. He holds membership in the Russian Artists' Union and his creations find homes in esteemed institutions such as the Russian Folk Museum and the Russian Museum of Modern Art. Notably, even Russian President Vladimir Putin has collected his works. Beyond national borders, Dashi's pieces grace private collections across the globe, from Germany, France, Belgium, Switzerland, and Finland to Japan and the United States. Dashi's choice of materials leaves a lasting impression, as he masterfully utilizes elements like bronze, silver, gold, horsehair, and mammoth tusks. His captivating creations seamlessly weave together the rich cultural tapestries of both Asia and Europe. Yet, amidst this unique blend, Dashi's imaginative world, firmly rooted in the mythologies and legends of the East (populated by celestial animals, heavenly guardians, and enigmatic beings), is skillfully brought to life through contemporary European artistic techniques. Dashi's ability to harmonize the influences of the East and West results in a harmonious and organic fusion.

Figure 1: Crossbowman

Furthermore, Dashi employs the technique of exaggeration with remarkable finesse in his artistic oeuvre. For example, he intentionally distorts the waist of his crossbowman, elongating the bow ("Crossbowman"); the wrestler is endowed with an exceptionally oversized head ("Wrestler"); the elderly warrior displays a gaunt countenance and a protruding round belly ("Aged Warrior"); the stargazer exudes confidence as he gazes heavenwards, his chin held high ("Stargazer"); the princess enchants with her sweet smile and half-closed eyes ("Princess"); the charming, chaotic birth of genius unfolds before our eyes ("The Birth of Genius"). Furthermore, Dashi's lamas, a series of sculptures, each possess unique and distinctive expressions. Finally, his sculptures of horses, characterized by the minutest of details, convey various emotions: some raise their heads to let out a resounding howl, while others remain in silent contemplation with their heads bowed, and still others gallop tirelessly. They are simultaneously ordinary horses and sacred spirits.

Figure 2: *The Effective Application of Exaggeration Technique*

The use of exaggeration as an artistic technique dates back to the Paleolithic era, and it was employed with remarkable precision even during those ancient times. An exemplary work from that period is the stone sculpture known as the "Venus of Willendorf." This artifact emerged during a social epoch characterized by matriarchy, where women held a central role. It might be attributed to the reverence for fertility during that era, but sculptures of that time tended to magnify the physical attributes of women, including thighs, breasts, and buttocks. For instance, the pronounced emphasis on generous buttocks might have been due to their association with the continuation of life. Some scholars even suggest that, in the harsh conditions of survival at that time, individuals with ample fat reserves might have had a better chance of withstanding famine. Regardless, the people of that era, after careful observation and a deep understanding of their subjects, skillfully applied the exaggeration technique to create remarkable artworks. Consider the work "The Standing Man" by surrealist master

Giacometti, crafted in 1947, which intentionally accentuates the figure. It portrays an incredibly elongated body with slender limbs, stick-like legs, and a diminished head and arms. Despite the diminutive arms, they convey an underlying sense of immense strength.

Artists are drawn to the use of exaggeration not only because it imparts a distinctive physicality that captures the viewer's attention but also because it accentuates the expression of the artist's ideas and the emotions they seek to convey.

The Significance of Properly Utilizing the "Exaggeration" Technique in Sculpture Creation

Within the realm of sculpture, there are numerous languages and techniques for expressing artistic aesthetics. However, the skillful use of the exaggeration technique in artistic creation is of paramount importance and serves as a testament to an artist's abilities. While there are various methods for sculptural creation, not all of them have the same impact and influence as exaggeration. Take, for instance, the sculptures of Russian artist Dashi Namdakov, where almost all of his works incorporate exaggeration. Yet, his creations stand out distinctly from others. The reason behind his adeptness in employing exaggeration is that it allows for a straightforward expression of the artist's viewpoints and ideas, infusing life and vividness into the artwork. In my own artistic creations, I frequently employ exaggeration because I believe that without it, the work would become monotonous, dull, and incapable of conveying the intended message. This is the unique artistic charm that exaggeration brings to sculpture, and this is the essence of its application.

Figure 3:"Elegance in Horse Gaits,"
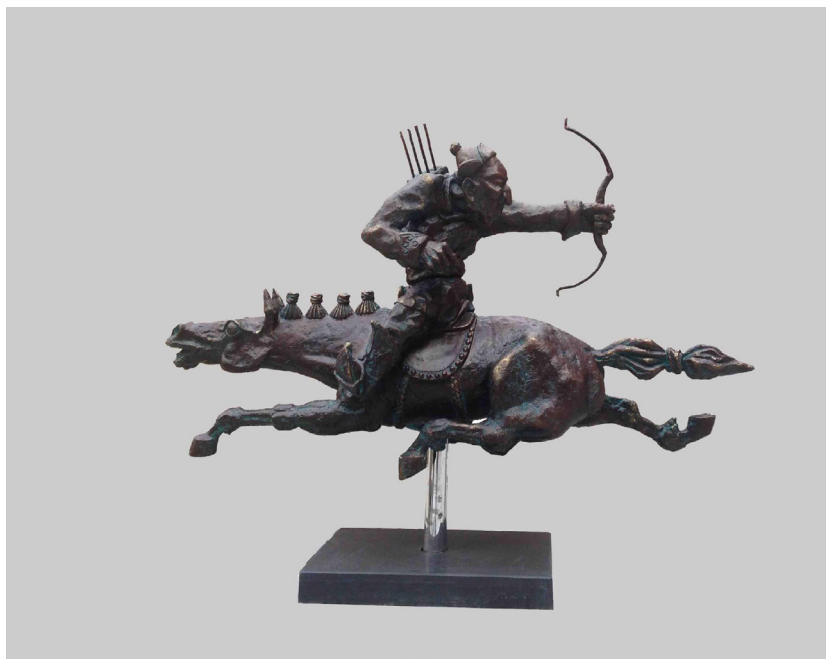
One of my personal creations, "Elegance in Horse Gaits," employs the exaggeration technique to showcase different aspects of sculptural artistic aesthetics and emphasize the distinct characteristics of sculpture. The horse is the most loyal companion of the Mongolian people, and within this group, the "walking horse" possesses a unique gait. Its graceful posture and steady, swift strides make it a sight to behold. The walking horse employs a lateral gait, meaning that each pair of legs on opposite sides move in synchronization as they alternate in their forward motion. With its mouth open to the wind and its tail forming a straight line that sways in the breeze, the hind hooves kick off with vigor, keeping the rider in a perpetual state of suspension. As a result, the ride is smooth and comfortable. In contrast, a galloping horse has all four hooves leave the ground simultaneously, resulting in a more tumultuous ride.

Therefore, the walking horse is a prized selection among the Mongolian people, particularly those who wear traditional Mongolian robes and carry traditional Mongolian tools. The Mongolian people are a nomadic horseback culture, reliant on herding and hunting for survival, and they hold the walking horse in high regard. Thus, this work features a Mongolian individual adorned in traditional Mongolian attire, riding a walking horse and demonstrating the art of shooting arrows by twisting their body backward.

Conclusion

In conclusion, the specific technique of exaggeration involves emphasizing certain aspects of essence and characteristics while remaining rooted in the essence of life and objects, avoiding arbitrary imagination. The application of exaggeration injects rich emotional color into the artistic beauty of sculpture, making the features of the sculpture more distinct, prominent, and capable of evoking awe, deep emotions, and profound sentiments.

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НЕКОТОРЫЕ РЕЗУЛЬТАТЫ ИННОВАЦИЙ В СРЕДЕ И ТЕХНОЛОГИИ, ОБРАЗОВАНИЯ ПО ДИЗАЙН-ТЕХНОЛОГИИ В СТАРШИХ ШКОЛАХ И СОДЕРЖАНИЯ, МЕТОДОЛОГИИ ПО ПОДГОТОВКЕ ПЕДАГОГОВ В МОНГОЛИИ

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Аннотация

В Монголии вопрос реформы образования стремительно развивается в ближайшие годы и основное внимание уделяется реформе программы полного среднего образования выдвигая такую государственную политику «Самое время получить полное среднее образование является временем обучать учащимся базовую ориентацию будущей профессии, которую они приобретут в будущем с возможностью обрабатывать информацию и принимать решения через гибкую программу с выбором ».

В настоящее время существует важная необходимость уделять внимание на реализации и всесторонне рассмотреть вопрос о подготовке учителей при реформировании содержания и методики вузовского образования в соответствии с требованиями к знаниям и навыкам персонала, работающего и проживающего в условиях системы Индустрии 4.0 , которая является эпохой бурного развития техники и промышленности, а также совершенствовании проектно-технологической образовательной политики, планирования, содержания и методологии общеобразовательной школы. В статье рассматривается по примеру то, как вопросы технического дизайна, робототехники, 3D-моделирования, информационных технологий, механического и электронного программирования отражаются и реализуются при реформировании содержания, методологии и подготовки учителей в области образования по дизайн - технологии Монголии.

Ключевые слова:
Образование по дизайн-технологии, Подготовка учителей, Методологические и технологические инновации и Инновации по содержания обучения

Предисловие

В Инчхонской декларации, опубликованной Всемирным образовательным форумом, подчеркивается, что «качественное образование способствует продуктивности и развитию знаний, а также развивает те же аналитические навыки, как навыки решения проблем, познавательные способности, личностное развитие и коммуникативные навыки, что и изучение математики».

Образование по дизайн-технологии в Монголии является важным фактором социально-экономического развития страны, поэтому содержание учебной программы по дизайн-технологии полного среднего образования характеризуется

тем, что в нем отражаются и совершенствуются знания, навыки, инновации, передовые технологии ведущих отраслей промышленности нашей страны и производство, основанное на высоких технологиях.

1. *Некоторые тенденции содержания и методики обучения дизайн-технологии полного среднего образования Монголии*

В соответствии с новым утверждением «Учебной программы» начального, основного и полного среднего образования приказом № А/491 от 1 августа 2019 года Министра образования, культуры, науки и спорта Монголии цели основной программы обязательного и факультативно-углубленного изучения дизайн-технологии старшей школы сформулированы следующим образом / формулируется следующим образом. (Министерство образования, культуры и науки, 2019 г.) Это включает в себя:

Цель обязательной основной программы состоит в том, чтобы учащийся развивался в гражданина, обладающего базовыми знаниями в области дизайн – картографии, технических и технологических наук, навыками творческого мышления и технологического исполнения, методами непрерывного обучения и развития, а также творческим отношением.

Цель факультативно-углубленной основной программы состоит в том, чтобы учащиеся углубленно изучали науку, научились определяя направление своей карьеры и развивали свои таланты, сильные стороны и способности в выбранной ими области интересов.

В учебную программу «Дизайн-технологии» полного среднего образования Монголии добавлено много новых тем и еще, мы осуществили множество важных мероприятий таких, как успешное внедрение во обучение разрабатывая методические рекомендации, книги/пособия для учителей и учебные материалы в последовательно углубленном форме, а также инновации в среде обучения и технологии включая в содержание курсов подготовки учителей. Поэтому при развитии этих знаний, навыков и отношения учитывались следующие пункты.

Это включает в себя:

1. Стать гражданином, способным творчески решать проблемы реальной жизни, используя полученные знания, а не изучать научные знания на теоретическом уровне;
2. Подготовить творческого гражданина с творческим мышлением, умением пользоваться технологией;
3. Также важно, чтобы учащиеся могли работать в команде в любой ситуации.

Учитывая, что содержание и методика обучения дизайн-технологии в старших классах должны быть реализованы таким образом, чтобы иметь целью формировать у учащихся вышеуказанных навыков, и мы определили и сформулировали основные принципы методики преподавания и методики уроков.

Мы сформулировали его таким образом, что обучение дизайн-технологии придерживалось в качестве концепции методологии обучения, ориентированной на учащегося, организовывали уроки с использованием методов обучения на

основании проектов по изобретению и совместного обучения, преподавали уроки дизайн-технологии, картографии в сочетании с математикой и другими предметами естественных наук, реализовали на основе информационно-коммуникационных технологий, отражая идею устойчивого развития образования, рассматривали знания, понимание, навыки достижения, проблемы, решение проблем и исследования. понимание, навыки достижения успеха, испытания, решение проблем и статус исследования, изыскания. (Таблица 1)

Таблица 1. Содержание группы «Механика и электроника» урока по дизайн-технологии

"Механика и электроника"	Методика	Методология оценки
10-ый класс. Технические движущиеся создания	- Метод, ориентированный на учащегося - Метод совместного обучения - Метод, основанный на проектах - STEAM	- Последовательный метод оценки - Метод рубричной оценки - Оценка результатов проекта
11-ый класс. Технические и автоматизированные создания		
12-ый класс. Смарт-устройства и роботы		

В рамках вышеизложенной работы по планированию и тестированию мы посчитали, что одной из основ успешного внедрения нового содержания обучения дизайн-технологии являются методически хорошо разработанные и подготовленные учебные пособия и материалы. Комплект из учебных пособий 3-х уровней по дизайн-технологии для 10-12 классов, который направлен на формирование последовательно углубленных знаний и навыков у учащихся в процессе изобретения по проекту и тестирования технических движущихся созданий, автоматических роботов , и смарт-устройств-роботов был разработан и внедрен в обучение.

ТЕХНИЧЕСКИЕ ДВИЖУЩИЕСЯ СОЗДАНИЯ
Комплект учебных пособий для учащихся 10 класса общеобразовательной школы (с руководствами)

АВТОМАТИЧЕСКИЙ РОБОТ
Комплект учебных пособий для учащихся 11 класса общеобразовательной школы (с руководствами)

СМАРТ РОБОТ
Комплект учебных пособий для учащихся 12 класса общеобразовательной школы (с руководствами)

Рисунок 1. Примеры комплекта учебных пособий по дизайн-технологии

"Механика и электроника" (10-ый класс)

При планировании методических рекомендаций по изучению содержания пособия «Технические движущиеся создания» соблюдалась следующая последовательность методов реализации проекта согласно принципам технического изобретения. (Баасанбаяр.М & Гоцбаяр.Р., 2018) (Схема.1) Это включает в себя:

1. Теоретические основы новых идей технических движущихся созданий
2. Дизайнерские решения технических движущихся созданий

производить технические создания, изучив типы, конструкции и принципы работы механизмов передачи движения
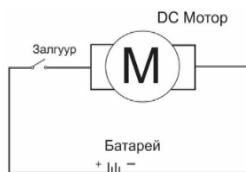
Выдвигать новые идеи розетка, батарея

Решения

по дизайну

Моделирование и дизайн

Тестирование и разработка

Схема 1. Примеры проектной работы "Технические движущиеся создания"

3. Технология, моделирование и построение технических движущихся созданий\
4. Эксплуатация и развитие/разработка технических движущихся созданий
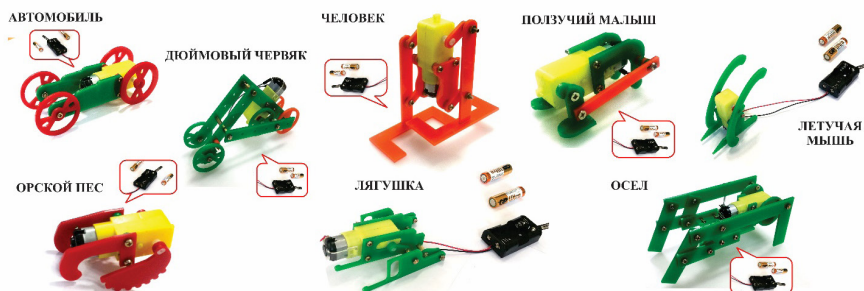
Рисунок 2. Версии "Технических движущихся созданий"

"Механика и электроника" (11-ый класс)

При планировании методических рекомендаций по изучению содержания пособия «Технические и автоматизированные создания» соблюдалась следующая последовательность методов реализации проекта согласно принципам технического изобретения. (Сэрээтэрдорж.Д & Оюунбаатар.О, 2018) (*Схема.2*) Это включает в себя:

1. Теоретические основы новых идей технических движущихся созданий
2. Дизайнерские решения технических автоматизированных созданий
3. Технология, моделирование и построение технических автоматизированных созданий
4. Эксплуатация и развитие/разработка технических автоматизированных созданий
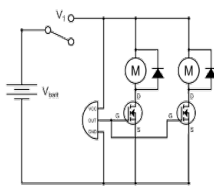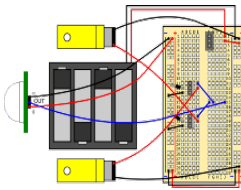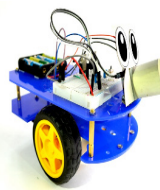
создать автоматизиро-
ванный датчик движе-
ния, изучив типы, кон-
струкции и принципы
работы электронных и
механических датчиков

| Выдвигать новые идеи | Решения по дизайну | Моделирование и дизайн | Тестирование и разработка |

*Схема 2. Примеры проектной работы "*Технические и автоматизированные
создания*"*
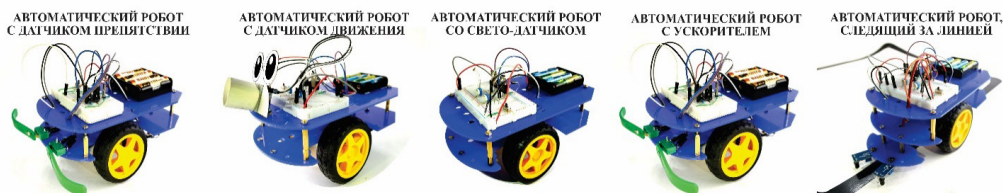
*Рисунок 3. Версии "*Технических движущихся созданий*"*

"Механика и электроника" (*12-ый класс*)

При планировании методических рекомендаций по изучению содержания пособия «Смарт-устройства и роботы» соблюдалась следующая последовательность методов реализации проекта согласно принципам технического изобретения. (Чулуунаа.Г & Алтантуул.А, "Дизайн-картография и технологии XII" учебник, 2018) (Схема. 3)

Это включает в себя:

1. Теоретические основы для новых идей Смарт-устройств и роботов
2. Дизайнерские решения по Смарт-устройствам и роботам
3. Технология, моделирование и построение технических Смарт-устройств и роботов
4. Эксплуатация и развитие/разработка Смарт-устройств и роботов

создатьизированный
датчик препятствии,
изучив рограмми-
руемый микрочип
Arduino

| Выдвигать новые идеи | Решения по дизайну | Моделирование и дизайн | Тестирование и разработка |

Схема 3. Примеры проектной работы "Изобретение Смарт-устройств и роботов"
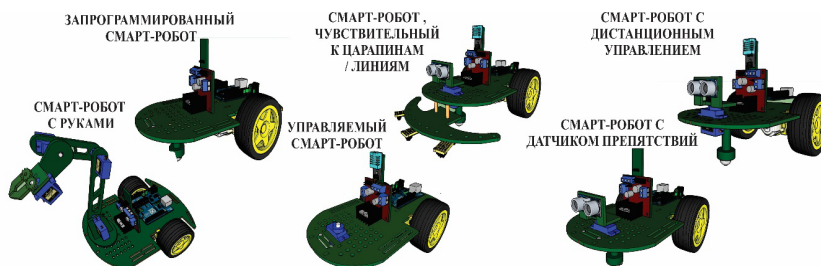
Рисунок 4. Версии по изобретению Смарт-устройств и роботов

2. *Некоторые результаты инноваций в среде обучения, технологии и содержания по обучению по подготовке "Учителей дизайн - технологии"*

Проанализировав подготовку и текущее положение специалиста «Учитель дизайн- технологии» *Монгольского государственного университета образования*, считалия, что в настоящее время существует важная необходимость уделять внимание на реализации и всесторонне рассмотреть вопрос о подготовке учителей при реформировании содержания и методики вузовского образования в соответствии с тенденциями творческого образования в странах мира, требованиями к знаниям и навыкам персонала, работающего и проживающего в условиях системы Индустрии 4.0 , которая является эпохой бурного развития техники и промышленности, а также совершенствовании проектно-технологической образовательной политики, планирования, содержания и методологии общеобразовательной школы. (Чулуунаа.Г., Оюунбаатар.О., Баасанбаяр.М. Методические рекомендации по реализации факультативной программы урока «Дизайн-технология» общего среднего образования, 2021 г.)

Ввиду этого требования при повторной разработке учебной программы бакалавриата «Учитель дизайн-технологии» специально учитывалось, что в основе наличия у человека знаний, образования и творческих способностей лежит принцип наличия равного баланса инновационного мышления, способности выражать свои мысли, идеи и способности творить. Например:

В план подготовки преподавателей дизайн-технологии добавлены уроки «Робототехника», «Компьютерное программирование CAD, CAM», было обновлено содержание уроков «Основы электроники» и «Цифровая электроника».

В рамках обновления методов обучения и среды: В обучении стали использоваться современное оборудование и инструменты. Наряду с этим учащиеся имеют возможность осваивать новые технологии и в школах всех уровней внедряются современные техники с Смарт-управлением (3D принтер, лазерный резак, ЧПУ и т.п.).

МГУО и *институт изобразительного искусства и технологий* создали производственную лабораторию (FAB LAB) и внедрили в обучениях 3D-принтеры, станки с ЧПУ и лазерные технологии. То, что внедрили в обучение вышеперечисленные современные технологии, играет важную роль в самостоятельном обучении студентов, и их разработке инновационных продуктов, в совместной работе и решении проблем.

Кроме того, для изучения передовых технологий студенты изучают программы САПР, такие как SketchUp, CorelDraw, Ultimaker Cura, Autodesk 3D max, Autodesk ArtCAM и Fashion Cad.

Заключение.

1. Монголия уделяет внимание развитию профессионального образования через свою государственную политику, а недавно утвержденная и реализуемая «Основная образовательная программа» для начального, основного и полного среднего образования создает условия для подготовки специалистов, которые оказывают важное влияние на развитие ведущие промышленные отрасли нашей страны, и эта обновленная программа характеризуется тем, что она основана на инновациях, передовых технологиях и высоких технологиях.

2. Разработка методических рекомендаций, книг для учителей и учебных пособий в последовательно углубленном форме, их успешное внедрение и реализация в обучении стала не только основой образовательных инноваций, внедренных в обучение, но также необходимо их массовое производство и распространение по всей стране.

3. То, что внедрили в план подготовки преподавателей дизайн-технологии добавлены уроки «Робототехника», «Компьютерное программирование CAD, CAM», обновляли содержание уроков «Основы электроники» и «Цифровая электроника», создали FAB LAB, комплексную учебную среду, и внедрили 3D-принтеры и лазерную технологию выпускали студентов, которые практиковались техникой с запрограммированным управлением оказывает значительное влияние на реализацию пересмотренного содержания общеобразовательной школы.

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THE SIGNIFICANCE OF TINKERING IN TECHNOLOGY EDUCATION

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Abstract

There are many theories about the significance of manufacturing in school education, and based on the results of practical research, it is now almost well known and accepted in the educational world. However, the Tinkering theory introduced here is a new perspective in that it finds meaning not only in manufacturing but also in the process.   In general, when creating something, there is some kind of fantasy about the ideal thing, and the practice follows that fantasy. Ultimately, this is a closed way of thinking about creating.

However, manufacturing is originally supposed to be an active activity for humans towards things that are yet to be seen and things that can be realized. The idea named Tinkering   is based on this perspective. In this report, I will introduce this Tinkering and actually introduce the teaching materials that will be proposed and put into practice.

Keyword:
Tinkering, Art, Technology Education

Introduction

The significance of manufacturing in school education can be traced back to J.J. Rousseau's "Emile". I will not discuss his logic here, but it can be said that even today, manufacturing in education is largely well-known and accepted based on the results of many practical studies. Particularly in recent years, the theoretical rise of STEM education and practical education based on it are the latest trends in research in the educational world.

What is STEM education? USA President's Council of Advisors on Science and technology (PCAST) announced "Prepare and Inspire K-12 Education in Science, Technology, Engineering and Math STEM for America's Future" in September 2010 As shown in Table 1, the report states that science, technology, engineering, and mathematics education should be implemented and recommended as a science and technology policy that emphasizes innovation creation.

Teb1. Recommendations in the PCAST report

[1] Try a wide range of effective educational practices.

[2] Recommend and support the transformation of standard laboratory courses into discovery-based research courses.

[3] Attempt a national initiative regarding post-secondary mathematics education to address the achievement gap in mathematics.

[4] Promote collaboration among stakeholders to diversify STEM career paths.

[5] Create a university- and industry-led President's Commission on STEM Education to provide strategic leadership for transformative and lasting change in STEM undergraduate education.

2. The philosophy of Tinkering

The Tinkering theory introduced here has a new perspective in that it finds significance not only in manufacturing, but also in the process of educational practice. Generally speaking, when creating something, a person has some kind of fantasy about his or her ideal thing, and practices follow that fantasy. Ultimately, this is a closed way of thinking about creating. However, originally, manufacturing is supposed to be a man's active activity towards something he has not seen yet, something he can realize. The idea named Tinkering is based on this perspective. Tinkering originally appeared in Europe in the 1300s as a sink repair shop that repaired household goods. However, it is now being suggested that it is not just a profession, but has some significance for children's growth.

Tinkaring is not just a makeshift movement, but has a logical philosophy. Table 2 classifies the philosophy. The basic philosophy is the fusion of science, art, and technology. This is similar to the philosophy of STEM education, but while the Tinkering philosophy excludes mathematics, it includes art. Excluding mathematics and including art asserts that this philosophy is even more free-spirited. The philosophy of STEM education differs in that it is primarily centered on the natural sciences. Nature itself is based on existing theories of nature discovered by humans, whereas Tinkering does not have a theory to rely on and seeks human needs for the future as they are. Another characteristic of his work is that he incorporates new ideas, such as adding humor to his works, and his philosophy is that the joy of making things is positioned as his philosophy.

Tab.2 Tinkering's philosophy

	Slogan	Summary
1	Fusion of science, art, and technology	By fusing science, art, and technology, we enable artistic expression using technical methods and scientific principles.
2	Create rather than consume	Bringing ideas to life from a place where there is no physical object at all.
3	Revisit and create ideas over and over again	Build, destroy, and rebuild as many times as you like.
4	Create now	When you come up with an idea, it doesn't matter if it's incomplete, so immediately make it concrete.
5	Using familiar material for something unfamiliar	Actively try using materials you don't know.
6	Express ideas by creating	The act of making itself becomes an expression of my own Adia.
7	love your tools	Try using the tools you currently have, think about how to care for them and how to use them correctly, and treat them with care.
8	revisit old technology	Review old tools and incorporate their mechanisms into your ideas.
9	Let's get in trouble	Even if you fail or things don't go well, being troubled becomes the source of new ideas.
10	have a sense of humor	Add humor to what you create.
11	Balancing autonomy and cooperation	Balancing autonomy and cooperation
12	sometimes dangerous	Be willing to take risks and understand the lessons that come from them.
13	Take things seriously and don't get serious	Although they take manufacturing seriously, they also have a lot of fun.

3 Tinkering examples

Here I introduce some examples of tinkering. Basically, references are used for reference. This document will be donated to the library of the Mongolian University of Education, so please refer to it.

3-1 A History of the Sky

3-2 The View from On High

Fig.2 The View from On High01

Fig.3 The View from On High02

3-3 Storoboscope Adventures

Fig.4 Storoboscope Adventures01

Fig.5 Storoboscope Adventures02

3-4 LED LOVE paint with light

Fig.6 LED LOVE paint with light01

Fig.7 LED LOVE paint with light02

Fig.8 LED LOVE paint with light03

Fig.9 LED LOVE paint with light04

3-5 Felted Tech
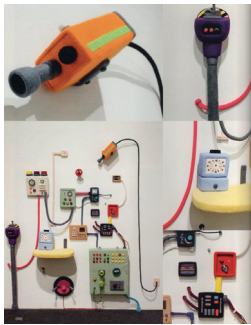
Fig.10 Felted Tech01

Fig.11 Felted Tech02

3-6 machine for drawing

Fig.12 machine for drawing01

3-7 Wire Works   **3-8 Cardboard girl**

Fig.13 Wire Works01   Fig.14 Cardboard girl 01
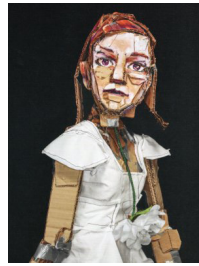
3-9 Absurdist Automation

Fig.15 Absurdist Automation01   Fig.16 Absurdist Automation02

Fig.17 Absurdist Automation03   Fig.18 Absurdist Automation04
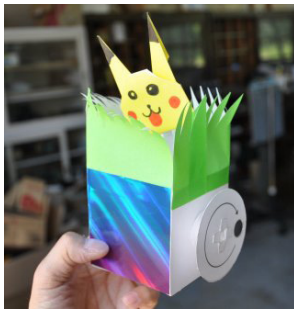
3-10 An instrument a Day

Fig.19 An instrument a Day01   Fig.20 An instrument a Day02

3-11 Fused Fashions

Fig.21　Fused Fashions01

3-12 Paper Art

Fig.22　Paper Art01

Fig.23　Paper Art02

3-13　character bento(Lunch) Art

Fig.24　character bento(Lunch)Art01

Fig.25　character bento(Lunch)Art02

3-14 Hardware and Programming

Hardware and Programming education include many practical elements of Tin-kering.

Fig.26 Hardware and Programming01

Fig.27 Hardware and Programming02

Conclusions

Tinkering has the following characteristics:

(1)There are no clear goals and plans.

(2)The work and production process have an emotional aspect of playfulness.

(3)It has a technical aspect of creating or changing things by disassembling or combining them.

(4)While STEM education focuses on encouraging learners to think logically, Tinkering can be said to be an education that fosters imaginative thinking in learners.

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RESEARCH ON STUDENT'S ABILITY TO READ, UNDERSTAND AND USE VISUAL INFORMATION
/On the example of Sewing Technology courses/

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Abstract

Students enrolled in the Design Technology Teacher's program have more developed visual skills and are more talented in drawing, designing, and crafting. Students applying to the school are subject to specific criteria and undergo an aptitude test. Students' visual skills are developed to a certain extent, but visual thinking needs to be better developed. Information transmission has its characteristics in the process of imparting design technology education to students. It is necessary to show and understand the subtle technological processes that are not visible, not limited to words, real pictures, descriptions, and video recordings, but are shown and understood by diagrams and cross-sectional images. To understand the technological process and create knowledge without forgetting it, students need to develop their visual thinking more. Therefore, the importance of improving the ability to read, understand and use image information in the development of students' visual thinking was clarified based on the research, and some results of the experiment tested on the example of professional lessons were summarized.

The content of general education school programs and textbooks includes technology planning and sewing diagrams at a certain level, and based on the analysis of how the content deepens in the professional curriculum, the study of the ability of students of Design Technology 2nd grade of DUTS to read, understand and use graphic information was conducted. The results of the tests-tasks corresponding to each ability were considered in this report.

The main important point of the research work is that the ability of students to read, understand and use graphic information with real examples has been determined, which can be included in the professional curriculum, and innovative teaching methods can be selected and used in design technology training.

Keyword:

Image information, Visual skills, Reading comprehension and Application skills

Introduction

From the format of information presentation, textual and audio information can be used to provide a comprehensive explanation, and numerical information enables various comparisons and calculations, while graphic details are the most accessible because they convey a visual image to the cut, so data is often presented in a consolidated form. An essential part of education is a person's ability to choose information, process it, and use it efficiently and effectively in life.

In the theoretical works of Russian scientists Likhachev and Anton Yuryevich, the

information system, the process of knowledge creation, and its regularity were studied. In contrast, scientists Katkhanova, Yu, F, Koshenov, and Kambarbek Sapashovich reviewed the methodological problems of information processing and delivery.

German scientist Miriam Brandstetter professors Angela Sandmann and Christine Florian studied students' cognitive activities and visual reading strategies using pictures in biology lessons, classified mental activities as "visual reading strategies", and explained the ability and knowledge to make conclusions using pictures. A study was conducted to detect two main activity patterns: the ability to make judgments through recall.

British and American scholars have shown that analysis is vital in reading (Garrison, D.R 2003). "higher and lower level cognitive functions of reading" (Treiman, Aronoff & J. Rees-Miller 2001), and J. Adler studied reading level and reading style (Adler, J & Doren, V.D 2015), respectively.

In the works of the notable Russian psychologist A.V., Petrovsky and Mongolian doctor of science D.Sanjjav, it is noted that when a person receives external shocks, the sensory organs will experience mental phenomena and the protein brain starts to connect and manage them. In the case of the visual information that we are studying, it is clear that the external stimulus to the students is received by the sensory organs of seeing through visual communication and visual stimulation and is transmitted through the act of visual perception. According to sensory methods, information is divided into visual, auditory, taste, smell, and touch. According to scientific research, more than 90% of the information received by a person from the outside world is related to sight and hearing, and about 10% is related to taste, smell, and touch.

The following mental processes are believed to occur in the human brain when the image information is read and understood. (Sanjjav. D, Jamts. L (2007) General Psychology., UB., p. 226-230) It includes:

- Analysis and synthesis of thinking (recognizing a phenomenon and then disassembling the structure of the phenomenon into its components and making it into one thing again to apply it in practice)
- The act of comparative thinking (establishing and comparing similar and different characteristics)
- The act of abstracting and clarifying thinking (thinking away from the real thing, moving back from the abstract to the concrete)
- The act of thinking and organizing (determining the standard and general characteristics of phenomena and expressing them in the form of definitions, rules, formulas, and conceptual conclusions)

Emphasis is placed on the role of vision in receiving information and the importance of concept in thinking.

Visual thinking is the way of thinking and interpreting pictures and images. Therefore, developing the ability to express, read, and understand information through images is essential in developing students' creative and visual thinking.

Visual information represents written information using special symbols such as pictures, diagrams, and graphs to help students understand it. This visual information contains much content, and the information is arranged in an organized manner. Students who have understood the general principle of image information can determine

in their mind what information it contains, remember and explain it. Reading and understanding pictorial information can be seen as identifying essential parts of the knowledge mentioned above creation process based on previous knowledge, finding out what the line representation represents, and interpreting it. Also, scientist E. V. Danilov (2009) believed that the way to create understanding is the process of analyzing information.

Image comprehension is the meaning that can be derived from the description of the object.

Diagram 1.The pattern of creating knowledge by reading and understanding picture information

Read image information

Recalling, predicting, imagining, orienting previous concepts

see the meaning of each icon, image, and symbol

find the difference between old and new information

Understanding image information

Understand and reflect on the given information, express the meaning in your own words, evaluate and draw conclusions

Finding differences between old and new information, evaluating and making conclusions

Use

Considering the nature, cause, regularity, and connection of phenomena and applying them to life and activities

The process of creating new understanding based on conscious action

The outcome of reading is comprehension, and the outcome of comprehension is application.

Studying the content of lectures and practicals in the sewing technology course, visual information is used more than these types of information and is important for the development of students' visualization and technical thinking.

The use of information is the result of human intelligence and creativity to analyze, test, restructure, verify, and invent the information we are considering.

Main part.

The course "Fundamentals of Sewing Technology" will be studied in the first semester of the 2nd grade of Design Technology. In the 1st grade, we will review the primary subjects of this course: Visual geometry, material science, and national crafts. Considering that they have learned how to read and understand the information provided by pictures, explain the scheme expressed by simple picture markers, and apply the methods in the same situation, a study was conducted to determine the ability level to read, understand, and use picture information.

Research objectives: To determine and test the ability to read and understand simple sewing diagrams included in the contents of the technology courses.

When determining students' level of knowledge, the following three parameters were considered in the example of the information provided by the diagram of sewing technology.

1. The task of drawing and visualizing skills
2. Show a simple stitch by drawing a diagram
3. Explain the diagram given in the picture

Students enrolled in the class can be assessed for their drawing and illustration skills based on their talent selection and entrance skills tests such as drawing and technology. The test focuses on how to apply simple line-drawing concepts to diagramming.

Simple sewing is a sewing that is visible, not hidden. It combines one and two materials and is a simple concept that can be included in the content of primary education.

To interpret the diagram given in the picture, the students need to think abstractly and analyze with imagination. At the same time, they can determine how they read and understand the information in the picture. If you can understand and interpret the diagram correctly, you can use it or sew the seam accurately.

Since students' drawing skills are taught in a continuum from light to heavy in elementary, fundamental, and senior grades, the test was developed considering the creative and technological requirements of the content.

The design technology teacher analyzed and compared the programs of the "Fundamentals of Sewing Technology" course.

A. Traditional curriculum
B. Updated program to reflect STEAM-integrated methodology
V. Updated program to reflect CDIO methodology

The program is designed to teach the skills of the stitches used in the sewing of garments according to the standards, the technology of parts, and the technology of sewing articles. But in the study of sewing technology and technical technology, drawing the subtle process of technology that is not visible to the human eye with special symbols, understanding it abstractly, and finding a way to think and innovate any process is the teaching of graphic information and the way to understand it. There is one goal. Therefore, to improve the ability to read and, understand and use image information, there was a need to study the methodology's reform, and the program was reform was carried out. From the comparison of the programs, it can be seen that the revised program has increased study time, and in terms of content, it is necessary to learn sewing technology in the sewing technology course, and the content of teaching the ability to read and understand and apply the information given in the diagram has been increased. Methodologically, integrated methodology and some versions of the recently introduced CDIO methodology of engineering education were studied for this professional course.

Table 1. Comparison of programs

Program\ Methodology	Advantage	Weaknesses
Traditional methodology	- Most of the time is spent on training to make the sewing neatly and to sew the items with quality. - Learn to sew 2-3 items included in the program	- Schematics are not important It takes a lot of time to learn how to sew one item - Students often need to explain - Students' creative attitude is weak - The student's drawing and thinking skills do not improve - Tends to imitate - Learn to make a few items during the school term - Weak ability to change profession
Updated program to reflect STEAM integrated methodology	- Improved scientific knowledge and understanding	- There was no good improvement in crafting skills - Little progress has been made in adopting new ways of thinking and enabling technology
Updated program to reflect CDIO methodology	- Improved skills Learn-as-you-go approach - The ability to express images has improved - There has been progress in the development of abstract thinking - I learned to make many items during the season - Increased content capacity -Learned independently and became able to create more works	- It has been observed that there is a need for a teaching methodology to guide the making of jewelry in an attractive and neat manner

Test results. Tested class group: A total of 90 second year students within the Design and Technology Teacher program

Purpose of the test: To improve the quality of education by changing the teaching methodology based on the knowledge, skills and attitude to be acquired in the «Fundamentals of Sewing Technology» course for the specialization of design technology teacher.

Objectives of the experiment:
• Analyzing the acquired knowledge and skills by organizing training in 2 classes of teaching and non-teaching professions with the «Fundamentals of sewing technology» curriculum
• Determine how teaching using visual information can increase the content of the lesson
• To determine whether learning to use pictorial data sewing schemes can improve the quality of students' learning and increase the number of items they learn to make.
• Test the methodology of conducting the lesson
• Determining the appropriateness of the content and time to increase the capacity of the course content

Experimental methodology: observation, experiment, comparison
-Stages of the test:
With a total of 8 hours of lectures and 64 hours of practice, a 24-hour experiment was conducted to study the content of the basic course of sewing technology, to understand and use diagrams.
The ability to read and understand graphic information includes the ability to recognize that a diagram represents a part of a product, name the components that make up the diagram, interpret symbols, correctly number the sewing sequence, and correctly draw.
- In an 8-hour lecture, the method of drawing partial technologies of sewing products by schematics, the method of reading and understanding sewing diagrams, and the cutting of real products will be explained in connection with the cutting topics of line drawings, and the standard markings of components will be introduced for drawing schematics. Students will learn how to draw \ the easiest\ sequence in 16 hours of practice. Repeated drawing allows students to understand the diagram.
- After learning to draw simple diagrams, you will be able to read and understand the type of lines, markings, sewing materials / color materials, lining materials, stickers / sewing sequence.
- Learn to draw a complex diagram consisting of many simple diagrams and acquire the ability to read and understand.
- You will learn how to draw complete sewing patterns and how to sew them.
In the ability to use image information, one can understand the ability to look at the scheme, find the correct sewing technology according to the technology, find the sewing technology in an easy way and express it in the scheme.
- Look at the drawn schemes and learn how to sew parts and articles.Being able to sew by looking at diagrams is considered learning the ability to use visual information.
- Find a simplified technology for sewing any item, modify the scheme and draw it

Table 2. Test course structure.

Subject of the lesson	Image information	Possessive knowledge	Skills
Types of machine sewing	A simple diagram of machine sewing	Type of machine sewing step, size, sewing technology	Types of sewing: sewing by industrial machines,
Pocket sewing technology	Sew an open pocket \ A complex scheme for sewing 4 types of hidden pockets	Components of various pockets, their markings, sequence of drawing diagrams	Sewing pockets on shoulder and belted clothes Read, understand and apply sewing patterns
Belt sewing technology	Belt sewing complex scheme	Marking and drawing diagrams of types and components of belted clothing	Sewing clothes with a belt
Cuff sewing technology	Composite scheme for sewing cuffs	Components, their designations, sequence of drawing diagrams	Clothes with shoulders
Point sewing technology	Composite scheme for sewing points	Components of various pockets, their markings, sequence of drawing diagrams	Dresses with shoulders and belts
Market sewing technology	Combined scheme of shirt collar and jacket collar	Marking of market types and components, sequence of drawing diagrams	Clothes with shoulders
Technology of sewing skirts and skirts	A complex scheme for sewing skirts and skirts	Components of belted clothing, their markings, sequence of drawing diagrams	Belted clothes
Sewing technology	Photos of the exterior of the Sewing scheme for each component	Components of shouldered and belted clothing, markings and order of drawing diagrams	Underwear and underwear

Research indicators, results and evaluation. The following table shows the task performance of the students involved in the study.

The results of the test on the topic «Technology of sewing components».

Table 3. Test results of 2nd grade students of design technology class.
(for each task)

№	Criterion	Assignment	average score	Total Score and Percentage
1.	Comprehension of image information	Task 1	4	19 / 76%
		Task 2	5,5	
		Task 3	4,7	
		Task 4	4,8	
2.	Analyzing image data	Task 5	5,5	21,5/48%
		Task 6	4,5	
		Task 7	5,7	
		Task 8	6,8	
3.	Image information is modified and simplified	Task 9	6	6 / 40%
4.	Conclusion based on coherence	Task 10	5,1	5/33,3%
5.	SCORE	Total score	50,5	50,5 point
		percent	51%	

Diagram 1
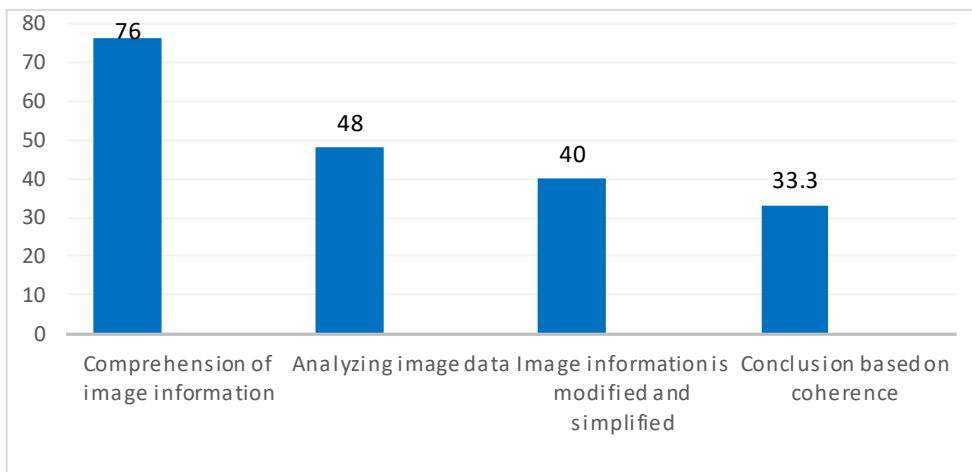
Average performance for each criterion
    Average percentage of criteria:
    Comprehension of image information   76%
    Analyzing image data   48%
    Image information is modified and simplified   40%
    Conclusion based on coherence   33,3%

As the task shows, it is important for students studying sewing technology to understand the graphic information or sewing scheme to master the technology of sewing clothes.

According to the results of the study:

1. It can be considered that the ability to understand and explain the diagram showing the order of sewing and the ability to analyze it is 48%, which can be considered as a weak ability to imagine what is being sewn.

2. The ability to change picture information and make conclusions based on correlations is a skill that can be done by those who have mastered the previous two skills, so it is clear that steps should be taken to train comprehension and analysis skills at the beginning of the lesson.

3. It is important to develop students' abstract thinking and imagination. Because by learning to read and understand the diagram of sewing technology, the students will be able to determine the sewing sequence in a short time and be able to sew items.

Conclusion

Analysis of the "Fundamentals of Sewing Technology" curriculum from the study time, content, and the correlation between topics and methodology

A. Depending on the study time, there was a big difference in the number of sewing items, technology, and drawing skills. It can be solved by choosing the proper method of determining the average capacity represented by the information structure contained in the definition of one training element.

B. Open up opportunities to work on more works by changing the methodology to develop the interests and talents of students evenly.

C. When mastering sewing technology, learning to work with graphic information or sewing schemes will give you versatility.

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DEVELOPMENT OF MONUMENTAL DECORATION AND MOSAIC ART IN MONGOLIA

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Abstract

How *monumental painting*, a type of Mongolian fine art, was developed depends on the context - of developing art to serve the people.

The development of monumental painting and social realism characterises Mongolian visual art.

Keywords:

Monumental paintings, Wall mosaics

Introduction

Art historians have done a lot of research, and produced much criticism, and academic studies about how the main types of Mongolian visual arts developed in the socialist period. Dr. L. Batchuluun and researchers D. Dashbaldan and R. Batochir have written about art during the era of social realism in their research literature.

Professional artists of monumental paintings were trained in many foreign schools, and a few artists returned to their homeland and worked on their art.

It is essential to think back to the time when Mongolia was trying to move forward with the construction of a socialist society. It was a time when social relations were governed by state policy and planning, and the work of each branch of society was based on economic relations.

An example was how branches of the Mongolian Craftsmen's Union Committee worked in each province to develop and train their own personnel, providing training and vocational schools.

After preparing and training artists in the field of monumental painting abroad, paid for by the state budget, such artists started teaching a professional class in the Secondary School of Fine Arts.

In 1985, the first class for training professional artists in monumental painting was opened at the Secondary School of Fine Arts. Badarchi Timurbaatar, a young teacher who had graduated from an academy abroad at that time, was appointed as the professional teacher of the class and started teaching. Teacher B. Tumorbaatar was born in 1958. In 1974-1978, he graduated from the sculpture and ceramics workshop of the Secondary School of Fine Arts.

In 1980-1985, he graduated from the V. Mukhin Institute of Art and Industry in St. Petersburg, majoring in monumental decoration. After graduating, he defended his diploma with complete wall paintings and stone mosaic models for the service centre of the third district of Ulaanbaatar city.

After graduating, the teacher opened the first monumental painting class at the Secondary School of Fine Arts and is recognised as an excellent artist-teacher, who

has produced dozens of artistic students. D. Tsolmon, O. Enhtaivan, S. Chuluunbaatar, B. Hongorzul, H. Uuganbayar, and M. Molomzhamts graduated from the monumental painting class and my teacher graduated from the same major.

Historically, the first professional artists of monumental painting were trained in Mongolia.

The Ministry of Culture was responsible for the artistic policy and repertoire of that time, and three schools for training professional artists belonged to the Ministry: Secondary School of Fine Arts, Secondary School of Music and Dance, and Secondary School of Circus Arts.

It was a time when the three schools provided training and development policies, teaching staff, and professional policies for local branches in the provinces.

Monumental painting, a category of Mongolian visual art, was produced as a time when works commissioned by the state were produced mainly to augment the city-state's enormous repertoire. Artists who worked in monumental painting have left behind many works that display the socialist realism approach.

Obvious examples are the many wall paintings depicting the glory of the working class, praising the hard work of socialist construction.

Main part.

The development of the art of architecture and monumental decoration in a broad sense was a significant issue in the modern visual art of Mongolia. The houses, buildings, and service centres that are standing in abundance today had to be decorated with monumental paintings.

During the socialist period, murals were normal for buildings and apartments, and part of the murals of the nineteenth district are still there. (Figure 1)

The wall art mosaic's idea, composition, and colour harmony are elaborately crafted. Members of the artistic council at the Mongolian Craftsmen's Union Committee used to evaluate new design ideas for the artists and produce works approved by the professionals.

Professionals completed the first part of the research to save, preserve and store the «White Horse Year Hand» mosaic on the north wall of building 61, Sukhbaatar District 1, Ulaanbaatar City, document it. (Figure 2)

This beautifully documents the protection of works of art, especially monumental paintings, for the first time.

We would like to see the works of fine art in every corner of Mongolia evaluated from an artistic point of view and approved by a professional council. It directly affects the beauty of the country and city, so the Mongolian Craftsmen's Organization should have the right to do so - following its mandate.

The «Hands of the White Horse Year» wall mosaic was created in 1992-1993 by the artist Sharavin Galsandorj 1992-1993 to commemorate the revolution of 1990.

The "Hands of the White Horse Year» wall decoration was created by creating the symbol of Mongolian chronology with moving circles of twelve years in the centre of the picture with a symmetrical design.

Mongolians use the blue colour to symbolise the eternal sky, and the representation of a seven-colour rainbow in the shape of a Mongolian house indicates unity,

which shows the frequency of the White Horse Year.

The form is a national-style work that beautifully expresses Mongolian weaving, knitting, and weaving.

To develop monumental art in Mongolia, it is necessary to always pay attention to the city's beauty. The development of monumental art assesses the level of development of the country. The larger the townhouse, the more monumental decorations and paintings are needed.

The loss of state and government policies that support this means that artists' livelihoods and works of art have been dispossessed. An example of this is the wall decoration paintings. The main idea of the work is to praise the socialist social development approach described above, which aims to show the creativity of the working class.

The circular wall of the complex monument is sixty meters long and made of reinforced concrete. On the outside of the wall, Mongolian Soviet military merit medals appear in the form of half-reliefs.

It was artificially decorated with Mongolian national motifs to honour the memory of the soldiers who died for us. In the centre of the field were five military cannons with eternal fire with a diameter of three meters. It symbolises the eternal remembrance of the Soviet soldiers who died for the independence of Mongolia in the Khalkh river war.

Inside the circular wall of the monument complex, there is a work that shows acts of friendship between the peoples of the two countries in chronological order.

Based on the design approved by the Central Committee of the People's Republic of China and the Council of Ministers of the People's Republic of China by Resolution 90/87 dated March 28, 1969, under the direction of the chief architect A. Khishigt, architects T. Mishin, N.Urtnasan, D. Elziyhishig, engineer-designer S. Ya. Kuznetsov, I. Baadai, young sculptors Ts. Dorzhsuren, P. Zulzaga, artists Y. Urzhnee B. Dorjkhand, and experts created a new design.

Thus, the monument dedicated to the Soviet soldiers in Zaisan Tolgoi was handed over on July 6, 1971, just before the historic anniversary.

This structure, with a whole architectural complex, consists of a statue of warriors, a pedestrian and car path to the monument, a parking lot, a gathering place, and an eternal fire, and it profoundly expresses the idea that the brotherhood and friendship of the Mongolian-Soviet people are eternal.

The monument complex begins with a spacious field at the foot of Zaisan Togol, a majestic big soyombo and a hammer and sickle, symbolising the indestructible steel friendship of the people of the People's Republic of China and the USSR.

The central axis of the statue on Zaisan's head is a Mongolian pillar placed on three pillars, symbolising life, and independence. It was created with the idea that the Soviet-Mongolian soldiers defended Mongolia's independence side by side.

It is represented by a majestic twenty-seven-meter-tall statue of a Red Army soldier standing with a Soviet soldier holding a victory flag in his right hand and an automatic rifle in his left.

Next to him, in the ceremony area with the words «Your golden life is with us, your glory is in life», samples of soil brought from the *Hero of the Patriotic War* city of Altanbulag, the cradle of the People's Revolution, Tolbo Lake, where they fought

against the foreign enemies of the two brotherly countries. The Hero of the Patriotic War of Khalkh Main Council was respectfully placed.

The Mongolian national pillar carries symbols from the main square of the monument to the circular wall above. On the inside of the wall, the history of the two brother armies and the victory over the German and Japanese invaders in 1921, 1939, and 1945, and the friendship and friendship of our two countries are depicted in monumental painting using coloured stone inlays.

Not long ago, dignitaries and representatives from Russia paid tribute to the eternal merits of Mongolian-Soviet soldiers and laid flowers at the memorial complex in Zaisan Tologi.

The monument and complex of the Soviet soldiers in Zaisan Tolgoi were first protected by Sukhbaatar District by Resolution No. 326 of 1987, Resolution No. 197 of 2007 by the Leaders of the City Council, and most recently by Resolution No. 357 of 2008 of the Governor of the capital.

Now, when I go out occasionally, I see that more needs to be done in cleaning the part of the complex and improving the environment.

One of Mongolia's significant development policies is beautifying the city by enriching it with monumental decorative paintings and other types of international standards.

Fine arts are at the forefront of social relations, and they should be accessible to the people. Urban areas decorated with works of art have the advantage that people, foreign tourists, and children of the next generation can see and feel the beauty.

Monumental painting works are characterised by the period of socialist realist art or works that praise the working class and people with socialist social relations. Monumental paintings and wall decorations are significant types of visual art that have survived the period of socialist realism.

The advantage of the society that created and created them was that they could create good things for their country and city by getting money from the government. Currently, the state has little policy on monumental art, and there is little policy on preserving and improving the few remaining works of art from the period of socialist realism.

One of the advantages of monumental art is that it offers equality to all people, giving them an education to be proud of and to imitate.

Since we have a unified state policy on monumental art and the Ministry of Culture, we need to look for every opportunity to support professional artists and dedicate their talents to our country's welfare.

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Development of monumental decoration and mosaic art in Mongolia.

THE FORMATION OF THE GRAPHIC COMPETENCE OF THE STUDENTS WITH THE DISTANCE TECHNOLOGIES

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Abstract

This article discusses the essence of the concept of "graphic competence", its structure and evaluation criteria. The formation of graphic competence among students of technical specialties and future teachers of technology is an urgent direction. Graphic competence is a component of engineering thinking. In the conditions of distance learning, the probability of the problem of controlling the educational process at a distance increases. Therefore, special technical means, techniques and techniques are required to solve these problems. Examples of teaching students graphic disciplines using distance learning tools are given.

Keywords:

Graphic competence, Distance learning, Teaching graphic disciplines, Future technology teachers.

Graphic competence of students is a subject competence – it is the ability and willingness to apply knowledge, skills and skills of performing graphic actions in a holistic educational process.

Graphic competence includes the necessary components:

• graphic literacy – the ability to read with the help of graphic tools, perform various design and technical documentation;

• graphic information is information gleaned from various technical and technological literature;

• graphic knowledge – concepts about the methods of graphic representation of products, processes, phenomena, norms and rules in accordance with the systems of standards;

• graphic skills – a person's willingness to operate with spatial images created on a different graphical basis, accurately express their own and read the thoughts of another person according to technical documentation;

• graphic skills – knowledge of working methods and software tools of graphic editors. [1]

Based on the structural content of students' graphic competence, it is advisable to identify the following criteria of formation: cognitive-informational, operational-activity, cognitive-creative, motivational-personal and evaluative-reflexive.

To check the graphic competence of students, we conducted a questionnaire, testing and analysis of the practical work performed. As a result of the test, one of the problematic criteria for students was the motivational criterion. Students did not quite understand the need to study the discipline, there was no interest in studying descrip-

tive geometry and technical graphics.

For the effective development of students' graphic competence, we have chosen the following pedagogical conditions:

- creating a favorable and creative atmosphere in the learning process that increases motivation to study the discipline;

- providing students with a choice of the main components of their education: meaning, pace, forms and methods of teaching;

- creation of a unified information space that provides students with complete information about the subject, provided interactively. [2]

In the educational process with elements of distance learning, it is important to increase the motivation of students to study the discipline. To do this, we select a set of distance learning tools that attract interest in the subject being studied, hold creative Olympiads, contests, etc.

We have chosen the zoom platform and the Padlet online board as the distance learning tools. The Distance learning in graphic disciplines involves the study of theoretical material and the performance of practical tasks. The theoretical course was conducted on the zoom platform. We chose the zoom platform in connection with the opportunity to demonstrate a presentation of theoretical material to students. The rich potential is of the built-in online whiteboard , where the teacher can give assignments to students and perform practical work together with them. The online whiteboard on the zoom platform's o has a fairly wide set of tools needed specifically for the drawing lesson: building a point, a straight line, an arc, a circle and other geometric shapes.

To the online Padlet board attach additional theoretical and reference materials, tasks for independent work, tasks are . Students get acquainted with the prepared material, interact with each other and with the teacher with the help of "likes", comments, adding their blocks, etc.

Figure 1
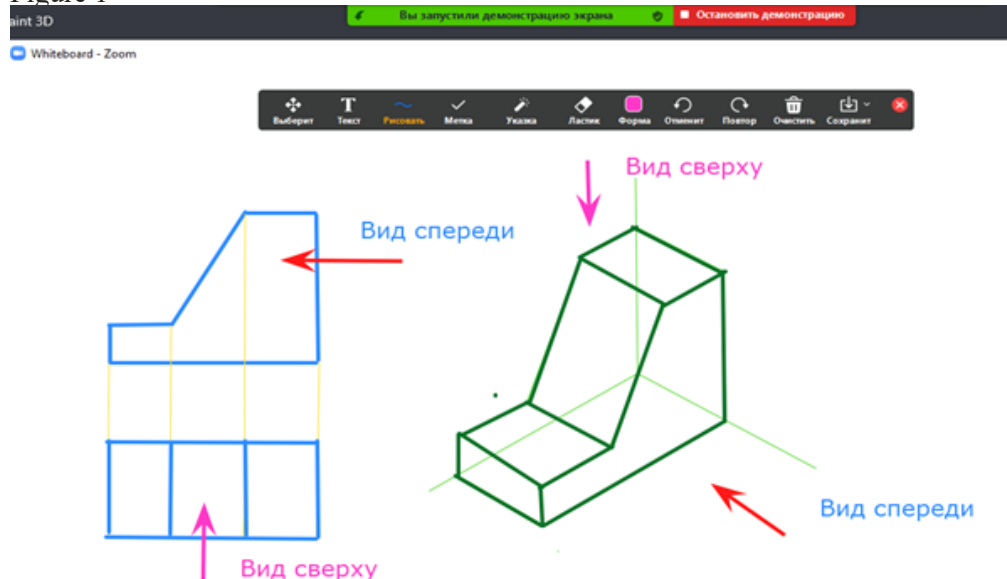
Distance classes were held while studying the topic "Axonometric projections". In the course of training students were shown short videos, presentations for visual representation of details and to consolidate the theoretical knowledge gained, axonometric projections were built on the ZOOM platform board. It is in order to increase the level of formation of graphic competence and especially the motivational component. Distance classes were held while studying the topic "Axonometric projections". In the course of training students were shown short videos, presentations for visual representation of details and to consolidate the theoretical knowledge gained, axonometric projections were built on the ZOOM platform board. It is in order to increase the level of formation of graphic competence and especially the motivational component.

In the using the ZOOM platform's capabilities gives students good ideas. A very important component is the possibility of sharing the board. Students can also finish drawing, make edits, and complete tasks on the same message board with the teacher. These opportunities increase students' interest in trying to complete tasks on the blackboard. The students are not such fear as standing at the in the classroom board.

Figure 2
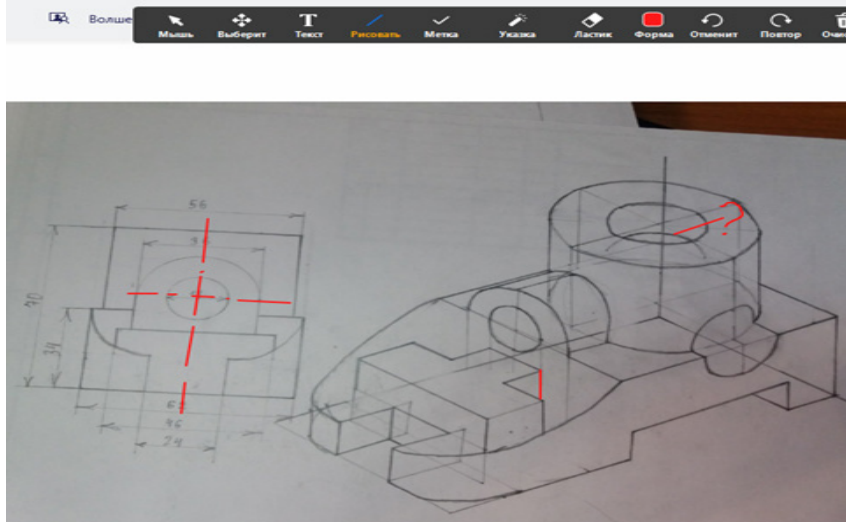
For the Figure 2 shows how it is possible to analyze errors together with students on the zoom platform's online whiteboard, to show inaccuracies in the performance of tasks.

The homework assignments were posted by completed students on the online Padlet board. This virtual whiteboard gives each student the opportunity to post their work on the whiteboard, and the teacher – to comment and evaluate everyone. It is also possible to use the blackboard by the teacher to place educational, methodological, control and measuring and other materials. Thus, any material in electronic form can be placed on the board. After lessons, we posted videos, presentations, and assignments on the blackboard so that students could repeat when completing tasks. And, the students placed the completed tasks in the same place where the teacher left comments about the correctness or incorrectness of the completed tasks.

Figure 3. Students' work on the Padlet online whiteboard
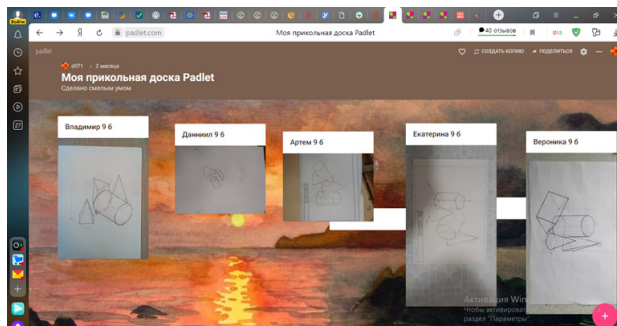
So, you can clearly see all the works, compare, and evaluate, and students can also analyze inaccuracies in their works and classmates.

As a result, students work with great interest on a virtual whiteboard, perform practical tasks, and work on practical tasks. Also on the zoom platform, students like to joint usage the board, the possibility of step-by-step photographing the work, creating a video recording.

On the results of the application of elements of distance learning, we can say:

- some indicators of graphic competence have improved.

- the motivation of students to study the discipline has increased.

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ABOUT ICONOGRAPHICAL UNIVERSALS IN THE IMAGE OF THE WHITE OLD MAN / LORD OF THE LAND AND WATER/ IN MONGOLIAN ART

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Abstract

the image of the White old man widely spread in East and Central Asia

The White Old Man is a widely held deity in East and Central Asia beliefs. He is known in Mongolia under the name Tsagaan Ebugen, as Tsagaan avga - in Kalmykia; his memory is kept in Buryat tradition and religion. N.L. Zhukovskaya associates Pehara with the image of the White old man in Tibet, in China - Shou Shin, in Japan - Fukurokuju and Dzyurodzin [1, p. 33].

Texts dedicated to Tsagaan Ebugen indicate that he is revered as the patron of wealth, happiness, luck, and family well-being and a deity of longevity, fertility, and procreation. In Mongolia, he is the «master of livestock», the owner of the Earth and everything that is on it - stones, forests, water, herbs, animals; he is called the Lord of the local spirits of the Earth, that is, he is placed hierarchically above the ordinary local land spirits. In a sutra from Gandan Monastery, he acts as «one who has vowed to help all living beings.» The exact function of Tsagaan Ebugen is evidenced by the sutra published by A.M. Pozdneev [2, p. 84-85].

Keywords:

Mongolian religious art, White, old man, Tsagaan ebugen, Archaic art

Introduction

They are following N.L. Zhukovskaya researchers associate with Tsagaan Ebugen the level of religious consciousness that O. Rosenberg defined as «folk religion» [3, p. 48], that is, a unique form of consciousness where folk pagan beliefs and later phenomena represented by world religions, in our Buddhism, directly come into contact, forming a syncretic fusion. This fusion of official dogma and cults of world religions with popular pagan beliefs becomes the religion of the masses. Religious consciousness is observed in the material of the historical heritage of almost all peoples. This is precisely how B. Rybakov, B. Uspensky, G. Nosova and others wrote about the essential destinies of the Slavic language for us.

What are the foundations of the soil of such an alloy? What is this - an external private concession, a local borrowing, conditioned by the adaptation of the world religion to an older, local tradition in conditions of direct concrete historical contacts, a well-known manifestation of tolerance characteristic of world religions, or a manifestation of certain essential, united, universal foundations of religious consciousness? Researchers, and above all, the most authoritative specialist in the field of northern Buddhism N.L. Zhukovskaya provides convincing evidence that including images of the pagan pantheon in Buddhism was not a consequence of purely mechanical borrow-

ings. In order to be included in the new pantheon, the character of the pagan pantheon had to «transform» himself, perform some feat, ascend to a new level of spiritual consciousness, cultivate the power of a more subtle, and therefore deeper, penetration into the being of the world. Such a feat could be participation in the battle with the enemies of the true faith and victory over them, achieving the status of an Elder - that state of holiness when one benevolent look, one gesture is enough for Life to blossom around. On rare occasions, this could be a meeting with the Buddha himself.

In the materials associated with Tsagaan Ebugen, all these conditions are met. The mentioned sutra, published by A.M. Pozdneev, describes in detail the famous meeting of the White old man with the Blessed One. Having been canonized in the 17th century, when the sutra «Incense and Offering of the White Elder» was introduced into the body of Buddhist works, Tsagaan Ebugen was included in the number of characters in the Tsama-mystery of intimidating heretics and enemies of the faith, pacifying and neutralizing evil spirits, and triumphing over them. Thus, the White Old Man became one of the famous Buddhist gods-defenders of the faith.

Finally, as in the sutra mentioned earlier, the Wise White Old Man reached that state of holiness when, wherever he cast his pale gaze, the Earth blossomed around him, cattle multiplied, daughters and sons were born, and «happiness associated with virtuous deeds» came. In the absence of attention on his part, everything around dimmed; Life froze. The look of disapproval of sinful human actions brought «unfortunate days»: illness, wounds, deception, consequences, torment, death. Thus, without losing the main characteristics of the character of the pagan pantheon, the image of Tsagaan Ebugen developed, transformed, and was endowed with features and divine pantheons of the Buddhist.

Among other possible grounds for the mutual adaptation of the pagan complex and world religions, scientists (N.L. et al., etc.) name certain standard typological features characteristic of pagan-oriented consciousnesses and of world religious systems in different geographical regions. These traits are not necessarily associated with borrowings in the process of historical contacts or with historical-genetic kinship. Often, they arose and existed independently of each other, being similar in their «external expression (comprehension, depiction) and in the functional role that they played in the religious complexes under consideration» [1, p. 147]. Such is the similarity of individual iconographic elements. A.M. Pozdneev, for example, notes: «Buryat shamanists are convinced that the Orthodox Church honours Tsagaan-Ebugen, uniting the latter's personality with St. Nicholas.» As one of the possible reasons for this, the scientist names the well-known iconographic similarity of «venerable, grey-haired elders,» dressed in long robes, with a staff and a bishop's staff in their hands [2, p. 81]. N.L. Zhukovskaya complements this similarity with an indication of a high forehead and a white beard and sees the reason for it in the usual external borrowing: «During the period of active Christianization of the Buryats in the second half of the 18th - early 19th centuries,» she writes, «the image of Tsagaan Ebugen was popular here merged with the popular image of the Orthodox Church, which was St. Nicholas the Pleasant» [1, p. 31].

However, this comparison of the pagan image existing in Central and East Asia with one of the most popular Christian saints, Nicholas the Wonderworker (Nicholas

the Wonderworker, Nicholas of Myra, Nicholas - in the Old Russian form, preserved by the Old Believer and folklore tradition), brings out the research pathos of N.L. Zhukovskaya's monograph, beyond mere typological similarity to the problem of popular religion mentioned above.

The image of St. Nicholas the Wonderworker has undergone perhaps the strongest folklore mythologization. His cult in Rus' until the 18th century was grassroots, plebeian, merging on the periphery with relics of pagan bear cults. He took on the features of characters from Slavic mythology, for example, Veles, the patron saint of cattle breeding and agriculture, the «cattle god,» whose cult was intertwined with the veneration of the bear as the owner of animals, the owner of earthly waters, the pacifier of the water elements, bestowing wealth, the merciful earthly character-Intercessor, opposing the formidable heavenly thunderer. (V.V. Ivanov, V.N. Toporov, B.A. Uspensky.). Just as Tsagaan Ebugen in folk religion became a connecting link between pre-Buddhist paganism and the Buddhist religious complex, Nikola Ugodnik became a «meeting place» of pre-Christian personifications and Christian holiness. Nevertheless, the main thing in the context of our problem is that the listed pagan functions with which the folk religion of St. Nicholas the Wonderworker is associated turn out to be typologically related to the functions of the character of the pantheon of Mongol-ethnic peoples [4]. The comparisons given in the notes, indicating the relatedness of the functions of the characters of different pagan complexes and the deities of various world religions, are so broad that they also address the search for some deep foundations of this similarity, analogy, and similarity.

Finally, science identifies another approach to solving the problem of the foundations of the organic connection in the popular consciousness of pagan forms and world religions. Researchers call it a certain initial, primary similarity of mythopoetic and religious consciousness, recorded not only during direct contact of cultures and peoples but also in pre- and post-contact eras. The works of prominent scientists (N. et al.. Levada, O. Rosenberg, B. Rybakov, etc.) show that similar models of understanding the world can be traced in almost any of the main rituals, symbols, ideas of the ancient archaic complex and world religions, to which no matter the refined metaphysics, no matter how refined abstraction theological concepts rise to. Folk religious consciousness (and not only the primitive one, which reduces the High but also thanks to which history preserves the memory of the High) indeed connects these constructions with a specific foundation laid in traditional early beliefs. This process is often defined as a constant, persistent, even «stubborn» revival of primitive, archetypal ideas and forms of worship.

However, modern science, like earlier religious philosophizing, increasingly raises the question of the persistent manifestation in culture of a remarkable human feeling, a unique inescapable energy of the human spirit - the «natural religiosity» of man, which lives in each of us and which is a manifestation of the human spirit. «Religious feeling, or rather a sensation, cannot be killed. It can only be directed... to false values and false prophets... Religious teachings that arose based on man's natural religiosity were intended to direct this religiosity into a moral direction, to give man the concept of the Supreme <to expand, deepen human consciousness> and to form his religious experience as a certain system of cognition.» The teachings brought by

Buddha, Christ, and Muhammad united people of different nationalities, countries, and social classes. «On their basis, man created confessions... formed a confessional consciousness... Confessional consciousness, often intolerant of people of other faiths, acted as a dividing principle.» It separated the followers of different Teachings, split the Teachings themselves into many confessions and sects. It can be understood as a product of low consciousness, in which «mirages of various differentiations and separations roam» [5, p. 21-22].

Bypassing confessional consciousness, drawing deepening and clarification of moral coordinates in the «depths of spiritual memory», akin to the foundations of the Teachings of world religions, popular consciousness in its highest forms directly addressed natural religious feeling and, relying on it as generic quality of a person, simply and convincingly fused early archaic beliefs with later religious systems, thus asserting the universality, the universal nature of the primary, fundamental religious ideas and the corresponding models of the world.

Art, being one of the oldest forms of human knowledge of the world, one of the earliest ways of penetrating the secrets of Nature - «Teacher of Teachers» (Leonardo da Vinci) - preserved vivid evidence of man's natural religiosity as his generic trait. Such evidence, in particular, can be considered in the fine arts' so-called iconographic universals - standard sets of signs, typological features, features, and meanings preserved and fixed by cultural tradition that characterize characters in systems of religious consciousness of various levels (from paganism to world religions) of various regions, different eras.

As evidenced by the sutras and known and dated pictorial samples studied by Buryat researchers, the iconographic tradition of the image of Tsagaan Ebugen developed by the 18th century, changing slightly at the beginning of the 20th century. Several groups can be clearly distinguished in it. First of all, the iconographic signs of the character's place of residence: «The mountain with five peaks» [6], a cave, a fertile forest, fruit-bearing trees, including peach trees, water (the river flowing around the place where Tsagaan Ebugen sits or the lake in front of him). In the tank of the 18th century, described by Buryat researchers [7, p. 10], Tsagaan Ebugen is depicted against the background of the back of the throne, symbolizing, according to the cultural tradition of many peoples, the entrance to the Temple, the toran gate, the Tree of Life. This Buryat tanka bears noticeable stylistic features of Chinese painting: Tsagaan Ebugen is depicted in the image of a Chinese dignitary. Interestingly, Mount Wutaishan, whose owner is called Tsagaan Ebugen in the sutra from the Gandan Monastery, is located in the Chinese province of Shanxi, bordering Mongolia. There is a monastery on the mountain - the main sanctuary of Manjushri.

Another group of iconographic features common to many cultures and peoples characterizes the very figure of the White Elder: «white as snow, with a beard and hair the colour of a shell,» with a large, high forehead, in the Buddhist visual tradition going back to the parietal convexity, or ushnisha, denoting the highest measure of knowledge and wisdom.

Another group consists of objects symbolizing the main functions of the deity: a rod, a staff with one or two dragon heads in the right hand, and «the wish-fulfilling Chintamani gem,» as evidenced by a sutra from the Gandan monastery, in the left.

This stone, in the form of three treasures, three jewels, and triratna, has the symbolic meaning of «the secret of three-in-one.» This group also includes the precious belt that passes through the three worlds - a thread connecting different worlds in the structure of the Universe. The sutras speak of it as the source of life force. Finally, figures of animals, waterfowl [8], and a book [9] complement this group of objects.

The iconographic features listed above are so widespread that, as cultural history shows, their use practically does not depend on either the religious system or the national-regional affiliation of the character. These signs turn out to be universal.

As for the specific artistic and figurative content of universal iconographic signs and diagrams, here, too, strange as it may seem at first glance, quite similar tendencies in the pagan and religious traditions of different regions are revealed. Thus, based on the typology of religious images identified by P. Florensky [10, p. 73], depending on the specific source of spiritual experience that serves as the basis for painting the icon, in the icon-painting tradition of St. Nicholas the Wonderworker, one can distinguish his images, marked with the stamp of deep, refined, esoteric immersions, lyrical and poetic images, as well as folk, folklore images in the form of a «peasant, waiting for a miracle.» The Buryat and Mongolian tanks of Tsagaan Ebugen, known to us at the moment, have shown that there are also metaphysical images, with the complication of developed symbolism, images coloured by expressive spiritual influences, and earthly folk images.

However, even to a first approximation, comparing Buryat and Mongolian materials with the images of St. Nicholas the Pleasant reveals quite tangible differences. As Buryat researchers note, even in the system of new representation, in tanks of the 20th century, the images of Tsagaan Ebugen retain the intonational colouring of the early Chthonic cult typology. The face, the smile of the deity, even in his virtuous, and even more frightening, hypostasis has an expression characteristic of a totemic mask, bears the stamp of archaic rigidity, a kind of ancient immobility, which is practically not found in the image of Nikola, even in the form of a «peasant in a zip». In the Russian artistic tradition, the light of expectation of a miracle shines through the carnal, in a different, more subtle way, structures the body in order to grow and transform it in the process of further spiritual work. If we compare the Mongolian and Buryat images of Tsagaan Ebugen with each other, then the sign of ancient magical expression is more clearly visible in the Mongolian samples. The Buryat tanks are reflected in constant contact with the Christian tradition, in its Orthodox and, moreover, often in Siberia in the Old Believer intonation, pacifying the confusion of the soul, harmonizing internal chaos.

Thus, the study of iconographic universals and their artistic transformations is one of the ways to reveal the natural tribal sense of religiosity of the people and its development in the history of culture and can serve as fertile ground for solving several cultural and art history problems.

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In a sutra published by A.M. Pozdneev, Tsagaan Ebugen says about himself: «In temples, I am the ruler of the space on which the sacred books are placed.» The latter also connects him with Manjushri, one of whose indispensable attributes is a book scroll.

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To Tsagaan Ebugen's speech to the Buddha: «Why does he live alone by the mountain,» the Most Perfect One responded, turning to the disciples accompanying him and as if summing up what the White Elder had said: «Children of the high-born, take an oath before my face that you will protect animate beings and help them! See Pozdneev A.M. Essays on the Life of Buddhist monasteries and Buddhist clergy in Mongolia in connection with the latter's relationship with the people. Elista, 1993.3. Rozenberg O. Introduction to the Study of Buddhism. Saint Petersburg, 1918.

Tsagaan Ebugena is related to Veles by the patronage of livestock, earthly waters, and wealth. With Nikola (Nikolaj - among the Kashubians, Poland, see: Uspensky B.A. S. 90-91), a demonological character, a goblin who confuses those who doubt, and at the same time a merciful earthly intercessor who leads the wandering on the road (see: Sychta V. Slownik gwar kaszubskich n a t l e kultury ludowej. Wroclaw-Warshawa-Krakow-Cdansk. T I-IV. 1967-1973. T III. P. 259), Tsagaan Ebugen connects the duality of his functions: protective, calm and, on the other hand, terrifying, punishing, threatening, as the sutras testify. In the visual tradition, this is manifested literally: in Tsagaan tanks, Ebugen looks like a kind, affectionately smiling Old Man; in Tsama masks, his appearance is terrifying. Finally, with Nikola Duplyansky (in the folklore short story «Nikola Duplyansky» or «Nikola Dubensky», we are talking about a figure located in the forest, in the hollow of an oak tree. See Uspensky B.A. S. 92; Mitropolskaya N.K. Russian folklore in Lithuania. Vilnius, 1975. P. 327; Pomerantseva E.V. On the question of the national and international beginning in folk tales // History, folklore, art of the Slavic peoples: V International Congress of Slavicists in Sofia. M., 1963. P. 397) Tsagaan Ebugen is brought together by his images that emerged at the beginning of the 20th century against the backdrop of a mountain cave, which, like a hollow tree, can be understood as a symbolic entrance to the womb, to the cavity, to the womb of the Earth, to «That Light», as an option transformation of the entrance to the Temple, or as a World Tree, communicating with the existence of the Other, being the meeting place of Earth and Heaven.

In a sutra from the Gandan Tsagaan Monastery, Ebugen is called the owner of the five-peaked Mount Wutai, created, according to Buddhist texts, by one of the three principal bodhisattvas - Manjushri (Sanskrit «glorious with radiance»), the Bodhisattva of Wisdom, the destroyer of ignorance, cutting off the fetters of ignorance with his flaming sword, ignorance. Wutaishan is Manjushri's permanent residence, where he descends and comes to the valleys to people.

ASSESMENT OF RESULTS FROM COMPARATIVE TESTING OF THE EFFECTIVENESS OF THE DESCRIPTIVE GEOMETRY-1 COURSE METHODOLOGY

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Abstract

In our presentation, we developed and tested a methodological version of the Descriptive Geometry 1 course. Lesson evaluations and questionnaires were analyzed to compare the strengths and weaknesses of teaching methods. The results were determined by judging which of the methodological alternatives was more effective.

Keywords:

Methodology, Analysis, Summarization, Point, Line, Plane, Projection.

Introduction

This study aimed to test a methodical version of the Descriptive Geometry 1 subject with the code A.DW309, to be stuin the spring semester of the 2022-2023 academic year, and to analyze the results of the tests taken by the students.

Nowadays, when information can be obtained in electronic form from anywhere, it is very important for the teacher to consider the problems faced by students studying the subject from all angles, and approach it creatively by imparting knowledge and skills that are useful to the current individual.

The study was evaluated by general analysis of the results of 130 students in the academic year 2020-2021. In this academic year, the content of Descriptive Geometry was conducted in the form of webinars using information systems. The methodology of the course was usually explained by the teacher and illustrated by example problems using AutoCAD software. The reinforcement part of the lesson is given in the form of independent solving of problems by looking at pictures showing the steps of solving similar problems.

The student submitted the tasks electronically and got marks. The results of the research were developed as tasks for recalling, understanding and analyzing theoretical knowledge.

Diagram 1
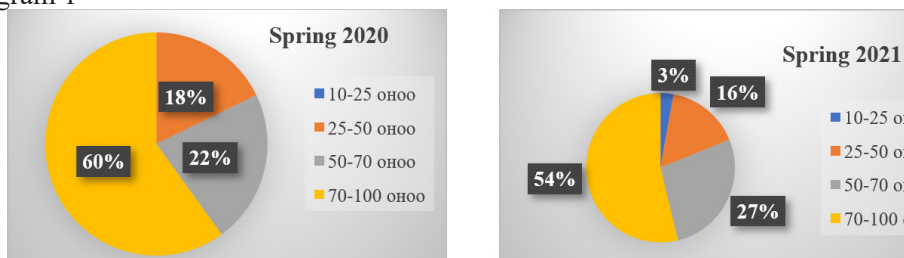
According to the results of the 15-question online test on points, straight lines, and flat topics, 51% of all participating students got unsatisfactory marks, which shows that they have poor understanding of the subject when distance learning is conducted electronically. Considering the factors that influence the learning outcomes we can mention, for instance:

- Learning environment
- Student's ability and knowledge of electronic applications
- Methodological issues of webinar training
- Lesson preparation.

Main part

The didactic study of graphic design aims and objectives,

Any science is based on modeling principles or models, so the main goal of this course is closely related to the basic requirements for designing and implementing new products. which must be performed by one of the methods. To accurately describe the shape and size of objects without distortion, the drawing should be done by hand or using a computer, using geometric construction methods [1], which is the basis of the technical drawing course, the projection of the descriptive geometry course. It is very important that the construction on the projection is made accurately with spatial imagination, It is necessary to consider the teacher's educational activities and the student's recognition activities in order to do so. [2] https://www.slideshare.net/tungaa5/ss-7505532

Table 1.

Teacher's educational activities	Student learning activities
Oral explanation	Listening, understanding and questioning
Үзүүлэн таниулах Visualization	Look, analyze, compare, find new ideas, write, draw
Asking	Search for knowledge, necessary for listening, thinking, and answering, plan, mark_ speak
Compare and contrast	Finding similarities and differences between objects, making conclusions, etc

As can be seen from the above table, in the training of descriptive geometry, the student's learning activities and the teacher's teaching activities mainly is viewing, analyzing, comparing, finding new ideas, writing, and drawing are dominant. Therefore, let's consider the drawing process of the descriptive geometry course. Including:

Table 2.

Student learning activities	Motivational actions of the teacher
Visualize physical objects from all sides or create a unified projection	Explain the types and categories of models and images with examples
Representing physical objects with pictures	Demonstrate the nature and characteristics of visual methods
Expressing the likeness of physical objects	Develop and explain the basic requirements for prototypes and images of physical objects

Representing physical objects by the symbols	Develop test tasks, problem exercises, databases including image and prototypes creation methods and versions of.
Representing things in abstract images	Development of educational games and physical model materials
Representing physical objects by identifying them	
Representing physical objects with simplified symbols	
Use of imaging methods for comparison	
Projection image conversion etc	

Therefore, in order to more effectively influence the students' learning and cognition of "depicting physical objects from all sides or making integrated projection drawings", the methodological version of the Descriptive Geometry 1 lesson was developed and tested by the students of SFA, who are future teachers of geometry design courses, as follows.

Figure 1. Traditional method
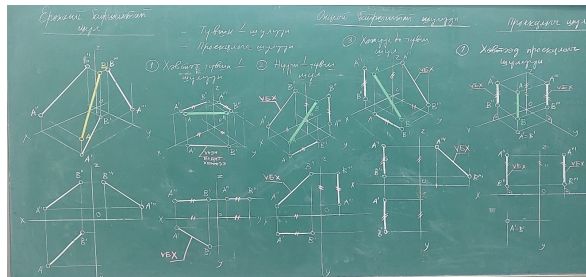
The traditional teaching method uses blackboard chalk, blackboard grids, and lines The traditional teaching method uses blackboard chalk, blackboard grids, and lines to depict the main contents of geometry lessons on a graph and draw a picture with an axonometric projection. This is done by the student looking at the board and drawing. This method has a direct relationship between the teacher and the students, and it is possible to ask questions in the middle of the lesson about the content that is not understood. However, after a long period of time, it is difficult to review and repeat the connection between the diagram and the image on the board, to identify the elementary geometric symbols, and to understand what you do not understand.

Figure 2. Traditional and electronic combined methods
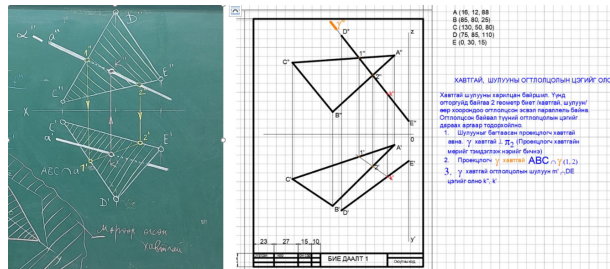
During the lesson shown in Figure 2, the picture drawn on the blackboard can be viewed from anywhere using AUTOCAD software, which has the advantage of adding animation. Conducting the course in a combination of online and classroom has many advantages, such as comparing with online courses in other countries in the Internet, where the students can study it regardless of time and space.

It is seen that the effectiveness of using both the traditional teaching method and the electronic format of the course content is effective when the classroom training is fully attended.

In order to facilitate the improvement of the visualization of the three-projection representation of the same object in three projections, which is encountered during traditional training, we have added electronic lessons using electronic technology, e-textbooks, and examples of homework created using AUTOCAD software. This was taught to 98 students studying Descriptive Geometry 1.

In order to measure the results of the course, the progress and knowledge of the 98 students studying the Descriptive Geometry 1 course were tested in the spring semester of the 2022-2023 school year. According to the research, it can be seen that 85.6% of all students had a sufficient level of general understanding of the subject of point projection and octant. Including:

-    80% of all students have a good idea about the location of the octant
-    80% of all students have a sufficient level of perception of the location of points
-    76% of all students have a sufficient level of perception about the location of straight lines
-    Perception of mutual location of geometric elements at a sufficient level in 66% of cases
-    Projection of plane projection subject location is at a sufficient level in 70.8% of cases.

Chart 1. Analyzed indicators of student evaluations
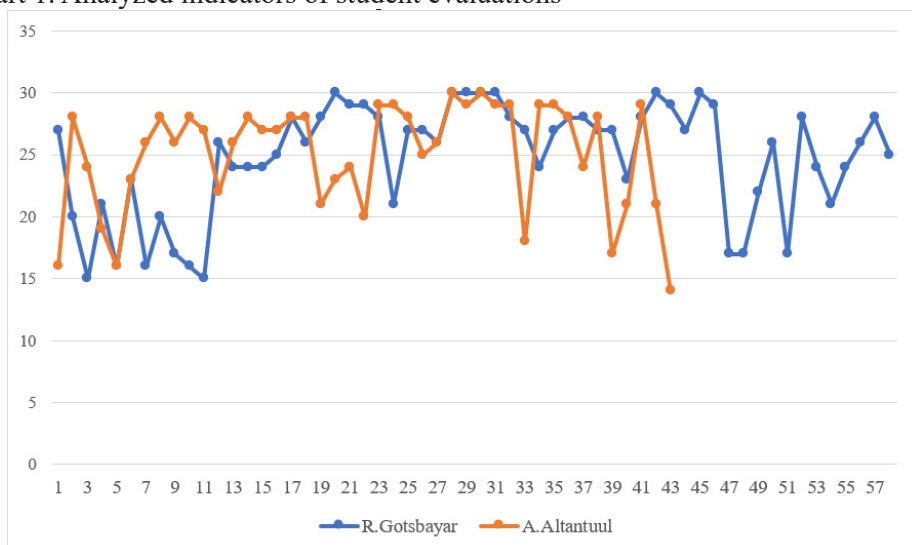
When developing the methodology, 2 teachers who teach the course explained the theoretical concepts:

- Methodology of moving from the general to the units (methodology of analysis), teacher Altatuul A.
- The method of generalizing from the unit (methodology of generalization) was considered and explained by Gotsbayar R.

The result

The topics covered in the research were analyzed using a comparative graph (see below) when using the teaching methodology. In this, the concept of point projection is defined as the top point of the surface and a projection is made. The projection of a straight line is represented as its edge, and it is analyzed and transformed into a location. That was analyzed and it provided the knowledge of how to use it in solving questions of transformation of the location.

On the other hand, when using the method of generalizing from the unit, the point is taken literally and its projection is determined. After determining the location, the edges and vertices of the surface are assumed to be straight lines, and the knowledge of using them in policy development is provided. If you look at the understanding of these contents from the Chart, you can see that the concept is vague because the abstract aspect at the beginning is dominant when using the summarizing method. From the middle of the lesson, the level of understanding was observed. From the beginning, it is observed that the methodology of analysis is realistically reflected. However, a little confusion is observed when transferring from the actual concept to the Chart construction.

The following indicators are obtained from the questionnaire survey for each of them about how they understood the application of these methods.

Chart 2. Points derived using the summary method

How clear was the content and teaching method for the classroom work on point projection? Please rate.

Was the content and teaching methodology clear for the classroom work on the subject of straight line projection? Please rate.

Was the content and teaching method clear for the class work on plane projection? Please rate.
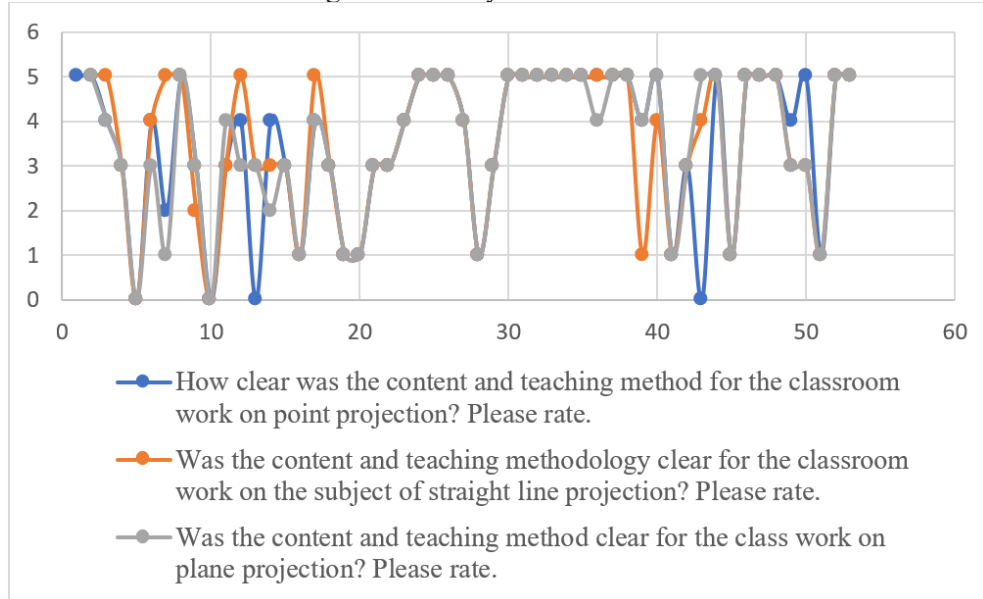
Chart 3. Points derived using analysis methodology

How clear was the content and teaching method for the classroom work on point projection? Please rate.

Was the content and teaching methodology clear for the classroom work on the subject of straight line projection? Please rate.

Was the content and teaching method clear for the class work on plane projection? Please rate.
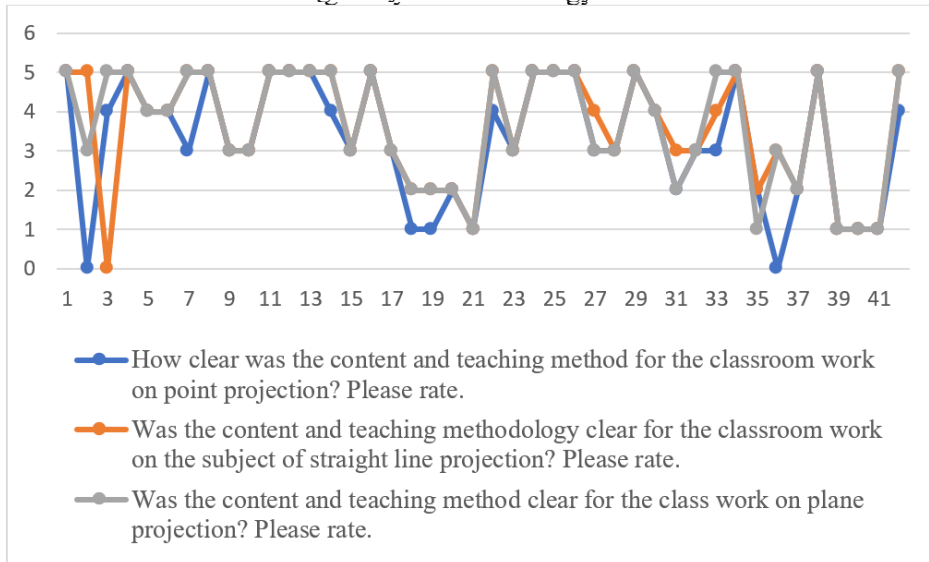
According to these Charts, it is seen that it is easier and clearer to explain the concepts of point, line, and plane projection by analyzing them from the whole. According to our evaluation, it is more understandable and clearer to explain the point projection when placed on a real image.

Also, when the Chart indicator was studied to look at performance of students who have already understood the lesson taught by these methods and then applied it to the next problem, the answer of 12-14% of the students was that they did not understand.

Why? Was the method of teaching the content clear in the classroom work on the subject of dot projection? 41.8% of respondents got 5 points, 19.4% got 4 points, 25.5% got 3 points, 6.1% got 2 points, and 14.3% got 1 point accordingly.

Chart 4. Analysis of point projection concepts
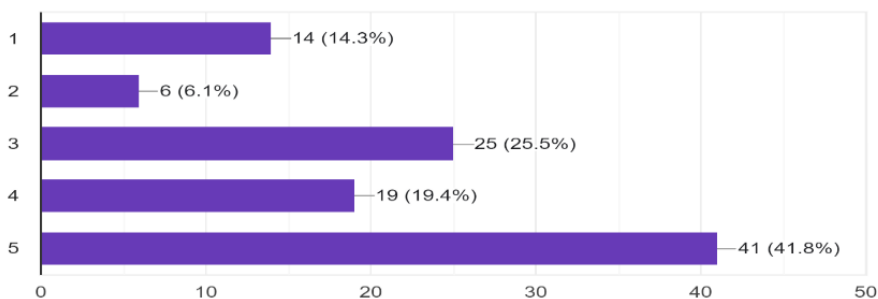
How clear was the method of teaching the content for the classroom work on the subject of direct projection? 47.4% of all respondents got 5 points, 11.3% got 4 points, 24.7% got 3 points, 7.2% got 2 points, and 12.4% got 1 point to the question of whether to rate it with 5 points.

Chart 5. Analysis of the concept of straight line projection
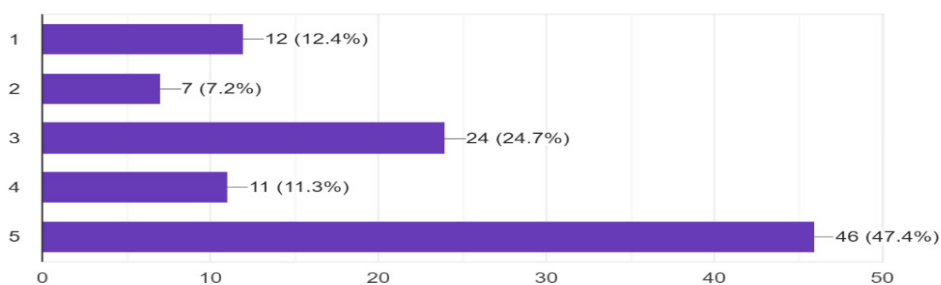
Хавтгайн проекц сэдвийн ангийн ажил хийхэд агуулга заах аргазүй хэр ойлгомжтой байсан бэ?

How clear was the method of teaching the content in the classroom work on the subject of plane projection? 45.4% of respondents got 5 points, 12.4% got 4 points, 24.7% got 3 points, 6.2% got 2 points, and 13.4% got 1 point

Chart 6. Analysis of the concept of plane projection
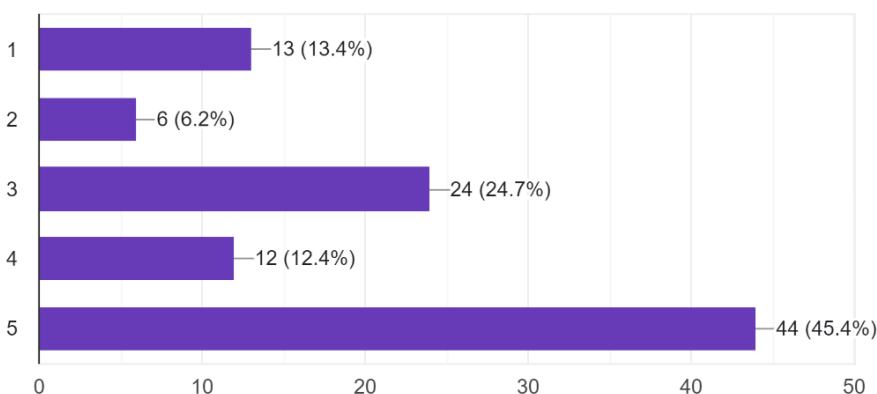
Conclusion

The results of the study show that the combination of traditional teaching methods with methods using electronic technology is effective in achieving the main goal of developing spatial imagination in descriptive geometry lessons.

This research obtained through the electronic test is not complete and collects information about students' spatial perception only superficially, but in the future, we will conduct a broader study by comparing electronic tests, homework assignments, class tasks, and exam tasks, and the lightness of homework assignments and problem exercises in the research. Based on this, it is considered appropriate to develop it according to the student's abilities.

It is easier to understand the content of descriptive geometry, such as the projection of lines, lines, and planes, or the recognition and location of geometric shapes, by the method of moving from general body elements to unit shapes. Therefore, it is desirable

to teach geometric objects, units, elements, points, and lines through the method of recognition.

The current trend is for the content studied during descriptive geometry to be closely related to other design courses, computer charts, 3D model processing, figure drawing, and industrial design, and therefore it is necessary to update the curriculum plan, textbooks, and e-courses accordingly.

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NEW TREND AND PARADIGM SHIFT IN ART EDUCATION

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Abstract

The features and development of modern society have affected art, the creative process, and art education. There is an active process of changing the learning paradigm in art education. Visual arts, including interactive and new media art, are concerned with the process of creating relationships between subjects and their impact on the real life of participants or viewers. Today it is not enough to understand Art only in connection with aesthetic concepts, there is a need to use art forms in everyday life and reflect ethical concepts. Transferring these processes to education allows students to connect creative activities with everyday life situations and learn using art in their social and personal relationships. Along with the development of the new century, art education and training trends are changing, and there is a need to prepare students for new challenges. This article briefly discusses how art education trends are changing in modern times.

Keywords:

Art Education, New Trends, Paradigms

Introduction

Since the 1990s, new pedagogies have emerged in contemporary art, with art teachers and educationalists looking for ways to take students beyond the classroom while focusing on the relationships between communities and countries' culture, history, and resources. (Huhmarniemi and all., 2021).

Contemporary visual art, particularly postmodern and post-postmodern art, is no different from the so-called pop mass art (Carroll, 1998), which is part of the visual arts. Because the interactive process between such artworks and the audience creates new social relationships in the context of everyday life, the visual arts become a medium between people like as art education (Freedman, 2003).

In recent years, more attention has been paid to the incorporation of new technology and digital media in art education. This includes teaching students to use software and tools such as graphic design software, 3D modeling, and video editing. In addition, there is a greater emphasis on an interdisciplinary approach that integrates the arts with other subjects such as science, mathematics, and technology. In addition, there is a greater emphasis on an interdisciplinary approach that integrates the arts with other subjects such as science, mathematics, and technology. Methods such as promoting STEAM education, which integrates the arts with science, technology, engineering, and mathematics, help students emphasize creativity and problem-solving skills and develop better competence.

One of the latest trends in arts education is to focus more on teaching cultural diversity and availability. This involves educating about artists from diverse cultures and backgrounds and promoting a more inclusive approach to art. There is also an increasing acceptance of the importance of teaching students about the business side of the art world, such as entrepreneurship, marketing, and networking. This is especially important for students who plan to work and pursue careers in the arts.

Community-Based Art Education involves collaborating with local communities to create art that is relevant to the community's culture and history.

These are just some of the many emerging trends in art education.

Main content

Due to the conflict between traditional and modern pedagogical approaches and the emergence of new technologies, a major paradigm shift has occurred and rapidly developing in education in response to changing social demands and values.

Paradigm shifts are an inevitable part of human life (Badarch, 2021).

Due to rapid technological and cultural transitions, the global trend is shifting from paper-based textual content to a variety of image-dominated formats. In this regard, the acquisition of multifaceted skills has been recognized internationally as the main purpose for students of the 21st century (Brown, 2004).

Paradigm is an ancient Greek word meaning «show, image, model» (παράδειγμα «paradigma»). It entered the English vocabulary in the 15th century to mean example or model. The linguist Ferdinand de Saussure considered a paradigm as belonging to a class of grammatically identical elements and Merriam-Webster dictionary defines a paradigm as a philosophical or theoretical system of a scientific discipline, school, or school supported by theories, laws, general patterns, and the experiments that underpin them. There is also a definition of a paradigm as the philosophical or theoretical foundation of any scientific work. In the Oxford English Dictionary, paradigms are defined as examples and models.

Thomas Kuhn defined «paradigm» as a practical tool that defines scientific order at that time.» In his 1962 book, The Structure of Scientific Revolutions, he defined the paradigm of science as: «- ... what is observed and tested - ... the types of questions that may be asked about the study and the answers tested - ... how these questions are structured - ... the results of scientific research The result will be determined by how it is explained. In other words, «Paradigm is a process of sharing beliefs and attitudes among scientists about how to understand pressing scientific problems and emerging academic seeds.» (Bold, 2008).

Also, John Patton defined it as «style and worldview», Henderson defined it as «finding a new way by wearing different glasses», and Harman defined it as «the basic way of thinking, evaluating and acting, reflecting a perspective on reality».

Paradigm shifts are constantly taking place in art, and Art movements or «-isms» reflect it. However, the art education system has been relatively stable.

Many researchers criticize that the current education system is educating the children of the information age of the 21st century with the methods of 20th-century industrialization, which shows that a new education system is important in the information age.

In the lecture «Do Schools Kill Creativity?» participated in the TED talk, culturologist Ken Robinson, expressed the idea that the current educational system is backward, groups students according to industrial principles, and teaches them according to one standard, which does not support the creative thinking of children, and suppresses them by putting them in one mold.

From the global debate about the needs and demands of developing knowledge, education, and learning in a world dominated by media and artificial intelligence, it is clear that universities that can imagine and implement appropriate changes will play an important role in shaping the future.

H. Arar and D. Chen identify the future challenges of higher education and assume the basis and diversity and inclusion of the next proposed paradigm shift. They argued that universities must adapt to the new era of change in order to meet the rapidly changing needs of knowledge creation and use. New technologies such as AI and learning analytics are not yet fully developed in the education sector, but they are believed to be key tools for understanding today's complex knowledge base. (Arar, Chen, 2021)

Over the years, the field of art education has undergone a paradigm shift in several ways. Foe examples:

From skill-based to concept-based learning: Traditionally, art education focused on teaching students specific skills such as drawing, painting, and sculpture. However, there has been a shift towards concept-based learning that emphasizes critical thinking, creativity, and problem-solving in recent years.

From a Eurocentric to a global perspective: Art education has historically been taught from a Eurocentric perspective, with an emphasis on Western art traditions. However, there has been a growing recognition of the need to teach art from a global perspective, incorporating diverse art traditions and cultures from around the world.

From passive to active learning: In the past, art education often involved a teacher-led approach where students were passive recipients of the information. However, there has been a shift towards active learning, where students take a more active role in their own learning by engaging in hands-on projects and collaborating with peers.

From traditional media to new media: With the rise of digital media, there has been a shift towards incorporating new media into art education, such as digital art, video, and animation. This has opened up new possibilities for creativity and expression.

Recent years have seen several new trends and paradigm shifts in art education. These transitions reflect a broader understanding of the evolving nature of art, advances in technology, and the role of art in society.

Here are some key trends and paradigm shifts.

Interdisciplinary Approach: Art education is moving away from traditional silos and embracing an interdisciplinary approach. Students are encouraged to explore connections between art and other fields such as science, technology, engineering, and mathematics (STEM). This integration promotes critical thinking, problem-solving, and innovation.

STEAM Education: STEAM (Science, Technology, Engineering, Art, and

Mathematics) education emphasizes the integration of art and design into STEM subjects. By incorporating art, creativity, and aesthetics, STEAM programs foster holistic learning experiences that encourage experimentation, collaboration, and real-world applications.

Blended Learning: This involves combining traditional classroom instruction with online learning. Students can access course materials and lectures online, allowing for more flexibility in their learning.

Project-Based Learning: This involves providing students with real-world projects that require them to use creative problem-solving skills to find solutions.

Digital and Media Arts: The rise of digital technologies has significantly impacted art education. Students now have access to a wide range of digital tools and software for creating and manipulating art. Digital and media arts programs focus on teaching digital skills, multimedia storytelling, interactive installations, virtual reality (VR), and augmented reality (AR). These advancements expand artistic possibilities and prepare students for careers in the digital age.

Community Engagement and Social Justice: There is a growing recognition of the role of art in social change and addressing societal issues. Today art education gives significance to community involvement, awareness of different cultures, and the promotion of social justice while learning. Students are encouraged to explore themes like identity, diversity, inequality, and environmental sustainability through their artwork. Collaborative projects, public art installations, and community-based initiatives are becoming more prevalent.

Global Perspectives and Cultural Exchange: With increased connectivity and globalization, art education is embracing global perspectives and cultural exchange. Students are exposed to a diverse range of art styles, traditions, and practices from around the world. Cultural competency and understanding are emphasized, enabling students to appreciate different artistic expressions and engage in cross-cultural dialogue.

Inclusive Education and Accessibility: The form of art education is evolving towards being more inclusive and accessible, with an emphasis on equal opportunities for all. Efforts are being made to address barriers to participation, including physical disabilities, socioeconomic disparities, and limited access to resources. Adaptive technologies, universal design principles, and community outreach programs aim to ensure that all individuals have equal opportunities to engage in artistic experiences and education.

Personalized Learning and Individual Expression: Art education is increasingly valuing personalized learning and individual expression. Students are encouraged to explore their unique artistic skills and interests. Art programs are moving away from rigid curricula and allowing for more flexibility, enabling students to pursue their passions, experiment with different mediums, and develop their artistic identities.

Environmental Sustainability: As environmental concerns become more prominent, art education is incorporating themes of sustainability and eco-consciousness. Students are encouraged to explore environmentally friendly art materials and practices. Art education plays a role in raising awareness about environmental issues and inspiring creative solutions.

These trends and paradigm shifts in art education reflect a broader recognition of the multifaceted and transformative power of art. Art education prepares students for the modern world through interdisciplinary approaches, technology, social engagement, and inclusivity while nurturing their creativity, critical thinking, and empathy.

Conclusion

Due to changes in social demands and values, a major paradigm shift has occurred in the field of education due to the conflict between old and new pedagogical thinking and the development of new technologies.

Over the years, the field of art education has undergone a paradigm shift in several ways such as: from skill-based to concept-based learning, from a Eurocentric to a global perspective, from passive to active learning, and from traditional media to new media.

Transitions in art education in recent years reflect a broader understanding of the evolving nature of art, advances in technology, and the role of art in society.

These trends and paradigm shifts in art education reflect a broader recognition of the multifaceted and transformative power of art.

By incorporating interdisciplinary approaches, technology, social engagement, and accessibility, arts education aims to prepare students for the complexities of the modern world while developing their creativity, critical thinking, and empathy.

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HUMAN-LEGGED IBEX DEPICTION AS A CHOSEN

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Introduction

The area of Central Asia, including present-day Mongolia, is abundant with the rock art engravings. Among the variety of rock images, the image of an ibex can be considered the most common image. Huge percentage of all the images depicted in the rock paintings of the Gobi region in Mongolia are images of ibex. This species played an important role in the different aspects of prehistoric nomad's daily activities. In addition to its game and food supply functions, among the others were their horns used as a raw material for making bows and arrows, and dried blood was widely used for healing. There are many images of ibex out there, but among them ibex with human legs, which we present in this contribution, are very rare (Цэвээндорж Д, Баяр Д 2002) (Ser-Odjav N 1986).

In this paper we present the rock paintings sites named Paaluu and Ikh Durulj, located 25 kilometers northwest of the Guchin Us [eng: Thirty Waters] soum center (subprovince of Uvurkhangai province), at the intersection of the northern end of the Gobi region and the southern edge of the Khangai mountains. This ara has already been provisionally studied. In 1995, a research team led by D. Tseveendorj from the Mongolian Institute of History with cooperation from the Korean Petroglyphs Research Association conducted research for the first time in the regions of Paaluu and Ikh Durulj. As a result of the research, a book titled «Mongolian Rock Paintings» was published in Korean in 1998, in recent years, Mongolian rock paintings have been rapidly attracted attention in Korea for the development of storytelling and content industries linked to the prototype of Asian culture. This was an opportunity to see the development possibility of Mongolian rock painting as a prototype of Asian culture, and it has been commercialized not only in Korea but also in Mongolia using rock painting patterns. (Lee Suna, Jeong Bu Young 2017). Later, in 2018, the research team of the Mongolian University of Science and Technology had conducted research in the region again. Efforts to register and document the rock paintings were conducted in Ikh Durulj in 2019 and Paaluu in 2020, which resulted in book titled «Rock Paintings of Ikh Durulj, Paaluu, and Hetsuu Tee» containing brief descriptions of the rock paintings. This book provides also an efficient introduction to the geographical and geological formations of the region (Бямба-Очир Ц, Бат-Эрдэнэ С, 2020).

The Ikh Durulj and Paaluu rock painting sites are situated in the desert landscape south of the steppes, spanning throughout the mountains of Ikh and Baga [Great and Small] Takhilgat, Ikh and Baga Durulj, Hetsuu Teeg, Ikh and Baga Argalant, and Ikh and Baga Unegt. It is a land of low rocky hills with sandy soil, predominant with wild leeks, ramsons, various shrubs and saltwort.

The Ikh Durulj Mountains are the remnants of an ancient extinct volcano with a flat peak, formed by igneous rocks stretching about one kilometer from the West to

the East. The rock paintings are located on the hills that extend along the southern part of the mountain. In addition, there are several ancient barrows and square tombs on the flats of rock formations. The Paaluu rock painting site is situated three to four km from Ikh Durulj, at the top of the low valley with a large trench formed by a fault at the eastern edge of the plain (Figure 1, 2).

Many experts and scholars have attempted to date those rock paintings through their visual features, symbols, and religious connotations, mainly by approximation rather than by a fixed methods. Among the many methods to date the rock paintings, the ethnographic method (Iconography) (Keyser J D, 1990), the modeling method (Style) (Derndarski M,1997), the technical method (Technique), the rock erosion and oxidation method (Patination and weathering) (Birkeland et al, 1979), radiocarbon dating method (C14) (Huyge et al. 2015), optically stimulated luminescence (OSL) (Huyge et al. 2021) etc. are predominant (Bednarik, 2002). Regarding the dating of the rock paintings of Paaluu and Ikh Durulj, it can be noted the designs appearing in the depictions provide reasons for considering them to be of the Bronze Age or the Neolithic period. A common expression of rock paintings in Mongolia considered to be dated to the Bronze age is the depiction of animals. However, this expression is hardly evident in the paintings of the research area. It should be noted that this could suggest that the rock paintings in the region may date further back than the Bronze Age.. There are two depictions in the studied area of carts that could be chronologically linked to Bronze Age. However, there are no depictions of horses being used to ride. There is only a single image of an animal similar to a horse or a deer being ridden.

Although there are no immediately recognizable figures of animals, there are several depictions of the ibex and the twisted spiral of its horns. This presentation is also found in Bronze Age rock paintings (Consens M, 2000). There are two reasons for the rock paintings of the region to be considered possibly pre-Bronze age with regards to their color and wear. The first is that the colors of the rock paintings are very faint, with some pictures barely visible and the second is that the black granite on which the rock painting was painted was cracked and broken in places due to some natural factor. Bayanlig's rock paintings with depictions of animals, which were dated to the Bronze Age in Mongolia, are bright yellow or brownish yellow in color, yet the rock paintings of Paaluu have shifted to a color similar to that of the main surface of the rock.

Depictions of cattle, ibex, deer, and some predators, which are usually associated with the Bronze Age and Neolithic periods, are predominant. Although there are no ethnographically identifiable depictions associated with this period for depicting the human form, there are a few common depictions of naked men and women giving birth.

Regarding the techniques used in the depictions, the use of non-metallic tools to indent the edges on the surface and scraping the inner part of the surrounding indentation, or only using the scraping method is observed to be predominant. However, in a few cases, some images have been made with sharp edges with little cracks and chips using a bronze or even possibly an iron tool. Based on all this, it can be assumed that the rock paintings of Paaluu and Ikh Durulj date back to the Bronze age or earlier.

There is a basis to examine the characteristics of the depictions of Paaluu and Ikh Durulj rock paintings in relation to the religious rites and rituals of the tribes that lived

in the region during the Bronze Age and earlier. It can be said that shamanism, which has long been practiced in Central Asia, and images related to some of its concepts are quite common.

In the traditional nomadic shamanism, it is believed that shamans communicate with the hidden world by transforming themselves as they perform rites and rituals (Девлет М.А, 2019; Raba K, Rozwadowski A, 2014). Although they can transform into any type of animal depending on the shamans, some studies mention animals such as birds, deers and wolves. The depiction of the ibex with human feet is a symbolic representation of the religious content that is important for many events such as hunting, curing diseases, and funeral or celebratory rituals, as a vehicle of the shaman to connect with the heavens and spirits. Paaluu's rock paintings show zoomorphological content with human legs. Although most ibex depictions focus on the movement and the shape of the animal, this particular image clearly shows an ibex head and body with human feet. In this image, the two front legs were depicted as to be walking, while the back legs are standing and the two horns were depicted representing space and distance with one behind the other and majestically curving to its back. The tail is risen up, and the neck and chest are shown in a straight line with the same width. The edges are irregular, which indicates that it was created by striking and scraping with stone on stone. The surrounding area of the ibex was filled with irregular dots, possibly symbolizing the sky

The next depiction of a human-legged ibex is more spatially expressive, moving away from the common composition of cave paintings that depict from the side, and the ibex is depicted in an unusual pose (Fig. 4). The important expression of the composition of the image is that the ibex is shown from the left back side when representing three-dimensional space, which highlights the artist's ability to express distance on a plane with a single color. Although the ibex is depicted with only three legs, the placement of the two hind legs and the position of the front legs were precisely designed, so that it seems all four legs are present in people's minds. One horn of the ibex is created with dashed lines and dots to clearly show each branch, while the right horn is depicted optimally depending on the viewing angle. Similar to the previous image, this image was also created by scraping with a stone, and light tapping on the horns. In the image, all parts of the body were created by using the scraping method uniformly, but the left horn was created using the narrowing method, which could indicate that this depiction was a carefully planned rock painting with religious tones, showcasing the artist's expression of space and distance, composition and techniques.

As Paaluu and Durulj rock paintings are rich with many depictions and imagery, there is a need to study them in connection with the traditional nomadic culture and religious practices. Furthermore, there is a need to study the artists who created the rock paintings and took their first steps in discovering certain methods and designs of visual arts and establishing religious rituals and art forms.

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Figure 1. General structure

Figure 2. General structure

Figure 3. Illustration of a human-legged ibex (photo by Andrey Klyuev, Russia)

Figure 4. Illustration of a human-legged ibex (photo by Andrey Klyuev, Russia)

MONNALISM IS MONGOLIAN MODERN PAINTING, IT'S MEANING

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Abstract

Modernist paintings have been developing since the last century in our country. This is included artists' minds, mentality, notion of their brain of heart and emotion of their, etc. Some of the researchers wrote: - "Mite of the abstract paintings were established in Hun states, because when this times, all of the people to the painted effect of their mind on the rock of cave" on their tractate book. They said only the mind of the abstract paintings was established, but this painting was developed in 1960. For example, in 1968 Mongolian young painters organized modern paintings, named: the first exhibition of young painters. Then, in 1980 modern and contemporary arts have been developing.

The purpose of the study is to analyze the development and classification of modern art in the late twentieth and early twenty-first centuries, which are kept in art galleries.

The aim of this research is to create a trend of modernism or monnalism that reflects the traditional thinking of Mongolia.

Keywords:

Mongolian modern paintings, Development, Revolution, Analyze, Monnalism

Introduction

In the twentieth century, Mongolian painting was more developed in thematic, portrait, nature, and life themes, and modernism flourished. In the late 1960s, abstract and Impressionism began to appear in Mongolian painting. The features of the works varied, and most of them rewrote the Mongolian tradition. Since the 1970s, the development of Mongolian art has been based on many trends, including fauvism, symbolism, surrealism, and cubism. It is gratifying that modern painting has been fully accepted since the 1980s. It can be understood that the competition of modern artists has started with the opening of open and closed paintings in a closed society. This is because it has been difficult to keep up with the evolutionary trend of glass painting since the 1990s. It was unclear who was drawing in which direction. They were considered by art critics to be «mind-boggling» paintings.

Therefore, this study was started in 2017. I analyzed 224 paintings at the Mongolian National Gallery of Art from 2017-2019. The reason for choosing the topic was that most professionals and non-professionals did not know about modern paintings and their classification. Art critics have not studied much about the classification of modern Mongolian art. However, the development of art has been studied extensively. For example, Mongolian and Soviet researchers have done a lot of research. In 1970, the publication of the magazine "Fine Arts" became a major contribution to the study

of fine arts in Mongolia. In 1975, he established a research institute and began to develop a brief history of Mongolian fine arts. At that time, not only Mongolian scholars but also foreign Mongolian scholars and researchers studied our fine arts.

A brief account of the study of modern Mongolian art:

Most of them were researchers from the Russian Federation. For example, researchers such as NN Belsky, KV Vyakina, SV Kesilev studied Mongolian fine arts. wrote a study of early art painting. Researching journalist II Lomakina also studied the state of Mongolian fine arts in the twentieth century in her work "Socialist Mongolian Fine Arts". OI Galerina, on the other hand, is unique in that it provides an overview of Mongolian fine arts.

In 1980, researchers L.Sonomtseren, S.Luvsanvandan, L.Batchuluun, D.Dashbaldan, T.Galbadrakh, B.Badrakh, and D.Maidar conducted a review of Mongolian fine arts, issues of tradition and innovation, types, and folk art. There are books and scholarly articles on the fine arts written by these scholars included articles on modern art.

Researcher L.Sonomtseren's book "Mongolian Fine Arts" aims to study and summarize the historical development of fine arts in the democratic stage of the revolution. He also wrote realistic paintings of 1921-1940 under the policy of the Mongolian People's Party. (Sonomtseren.L, 1989)

D.Dashbaldan, an art critic, wrote the book "Modern Art" in combination with the artist's skills and introduced the main representatives of modern world art trends. Researcher N.Tsultem also wrote an article entitled "New Mongolian Fine Arts" in which he praised the contributions of senior Mongolian artists. (Tsultem.N, 1991)

The first half of the twentieth century was entirely within the confines of the ideology of socialist realism. At the end of the twentieth century, however, modern paintings and articles about them became popular. Since the 21st century, art critics Uranchimeg.Ts, Sosor.O and Erdenetsog.Ts has written books and essays on contemporary art. Art critics Uranchimeg.Ts in her book: wrote the term modern art. Art critic Erdenetsog.Ts explained the colors of modern art, while art critic Sosor.O wrote about the history of art.

Method

The following methods were used in this research. It includes:

1. The interpretation method was used to study and analyze the features of Mongolian modern painting.

2. Quantitative, qualitative and dynamic methods were used in the classification of modern paintings.

3. In order to strengthen the main research problem, focus, interview and questionnaire methods were used.

The interpretation method was used as follows to study and classify the features of Mongolian modern painting. As what hermeneutics studies is a problem of understanding rather than a problem of truth, it does not emphasize approaching the subject from its own subjective position, but finds a completely new interpretation of meaning, interpretation, and reason. Therefore, we analyzed each work from the position of artist-painting-interpreter through interpretation. This work is made with general

parameters such as the expression of meaning, color, paint, character, their interrelation /Reality and unreality/, description, design, and method features. Also, the basic understanding was reinforced by the question of whether the art is consistent with the main features of the trends / color, paint, method or image representation/ and why the painting is included in this trend. The focus of the research, interviews, and questionnaires were conducted according to the following questions: what did the painting express, which direction was it drawn in, why, the interrelationship of characters and images, the characteristics of color and technique, and how did they contribute to the development of Mongolian painting.

History of Mongolian modern paintings

Modernism - (Italian modernismo-modern), in Latin modernus means modern, new generation.

Modern fine arts originated in the world in the late 19th and early 20th centuries. American and European art critics have differing views on the term Modernism. American art critics believe that it began in the early 19th century with classicism, while European art critics believe that modern art began with Impressionism. (Read, 1933)

For example, art historian and mathematician Richard Dedekind (1831-1916) and Ledwig Boltzmann (1844-1906) believe that modernism began in the 1870s. Researcher Everdell traces the origins of modern art to a painting by Seurat painted in 1885–1886. Clement Greenberg, on the other hand, says that it originated in Immanuel Kant's (1724–1804) work, The First True Modernist. (Everdell, 1917)

Austria's Eyesteinsson notes that «modernism began in the early 1800s with Romanticism, Realism in the 1830s, and the first Impressionist show in 1874.» (Eyesteinsson, 1990)

American art critic John Elder field believes that «modern art dates back to the early nineteenth century or the period of classicism.» «Modern art has its roots in Impressionism,» says Read's. (Read, 1933)

Let me briefly introduce the origins of modern Mongolian painting.

Mongolian paintings are derived from ancient rock paintings. Toten idols and animal images have evolved from paintings, and images of Buddhas have appeared on paper.

Painting was highly developed in the arts and culture of the first states of Mongolia, such as the Huns, Xiambi, and Zhujiang.

Later, in the Middle Ages, the works of Undur Gegeen Zanabazar became famous for their craftsmanship. Social-realist paintings have been developing since the twentieth century. it is directly related to the government of the time. In the same century, modern painting began to develop in Mongolia.

In this study, Moern categorizes the development of art as follows:
1. Beginning period / 1950-1970 /
2. Development period / 1970—2000 /
3. From modernism to postmodernism / 2000-2010 /

At the beginning of 1968, the "First Exhibition of Young Artists" was opened in the exhibition hall of the Mongolian Craftsmen's Union. That exhibition became the

basis for the development of modern Mongolian art. In this exhibition: O.Tsevegjav "Mother's white heart", B.Soosai "Mother", "Atak", "Lullaby", P.Baldandorj "Lake Hövsgöl", "Still life" G.Dunburee "Modern goat" spread.

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In this exhibition: O.Tsevegjav "Mother's white heart", B.Soosai "Mother", "Atak", "Lullaby", P.Baldandorj "Lake Hövsgöl", "Still life" G.Dunburee "Modern goat" However, the Central Committee of the Mongolian People's Revolutionary Party issued a resolution to close the exhibition, accusing the paintings of promoting bourgeois ideology. At that time, only a few genres of art were developing: wealth, history, and portraiture.

One of the first abstract paintings in Mongolia is «Mother's White Heart» by O.Tsevegjav.

Artist O.Tsevegjav's painting «Mother's White Heart» is unique in that it shows the inner heart of a mother in geometric shapes and colors. The top of the picture is painted in blue and symbolizes the sky. The bottom of the picture is painted green to symbolize the earth. (Бельский.Н.Н, 1941)

One of the first abstract paintings in Mongolia is «Mother's White Heart» by O.Tsevegjav. Artist O.Tsevegjav's painting «Mother's White Heart» is unique in that it shows the inner heart of a mother in geometric shapes and colors. The top of the painting is painted in blue and symbolizes the sky. The bottom of the paiting is painted green to symbolize the earth. In the center of the painting is a white square, a symbol of the mother's pure white heart. The artist is unique in his work: he abstractly depicts the love of the mother and the connection with the earth.

Mongolian modern painting originated in the middle of the 20th century and is still in the leading position today. Paintings that depict customs, livelihoods, horses, and the natural world, and use too much abstraction in terms of color, technique, and meaning, have been called modern, but there is a lack of research that is professionally classified according to current fields. It makes it difficult for viewers to understand, read and determine the level of development of Mongolian modern painting.

With Mongolia's transition to a democratic social system, not only did the visual arts progress intellectually, but the themes, content, and methods of the works have greatly developed, and works of art continue to be created in all currents of modern art. After researching, many researchers have determined that although impressionist works were born in the 1960s, the peak of development was in the 1990s. In Mongolia, impressionism began to enter the development of painting from the beginning of the 20th century, which is clearly evident in the works of artist Ts. Narangerel. His works such as «Sunny Day» and «Nature» are different from realism due to their combination of color and technique. The characteristic of impressionist painting is reflected in nature painting / directly reflects the impressions born on nature/, it has alla prima action or writing, it expresses the phenomenon realistically, and the action is more distinguished by color. His work praised the beauty of nature, and he is known as the artist who used the «alla prima» technique the most in the Mongolian art of that time, so his works can be considered under impressionism. One of the characteristics of

Impressionism painting is that it studies the color and harmony of the painting in connection with the science of color studies. It is evident in the works of the artist that their method is expressed in the works of partial small entries on the picture background and harmony of light and shadow colors. The composition of the work «Sunny Day» is a visual painting, drawn with the difference of light and shadow of the summer season.

But Mongolian scholars who do not exist have studied the flow of abstract painting. For example, the researcher Ts. Uranchimeg said, «Abstract flow is an art that seeks the expression of abstract thinking, the worship of colors and lines, and innovative methods*"* [1]*(Уранчимэг.Ц, 2002)*

Picture 1. Adyabazar.A "Mongolian queen" 1992

Researcher Ts. Erdenetsog emphasized that «Abstract art is one of the trends of modern art, which refuses to depict the real quality of things, and aims to express meaning and ideas through the coordination of shapes, colors, spots, and lines.*"* *(Эрдэнэцог.Ц, Уран зургийн өнгө, 1999)*

Among the modern trends developed in Mongolia, cubist painting has a special place. Cubism is characterized by expressing all of the artist's feelings, such as ideology, emotions, and thinking, through color harmony and composition of images. The cubists took the sharp expression of post-impressionism's colors and aimed to show the deep sense of space in an orderly manner among various compositions. Among those immersed compositions, the thought of stimulating the curiosity to find the limit of human visual perception within the limits of a specific image /hidden in the composition of many images/ is reflected in the flow of meditation and modern painting.

Picture 2. Comparison of works of Adyaabazar.N
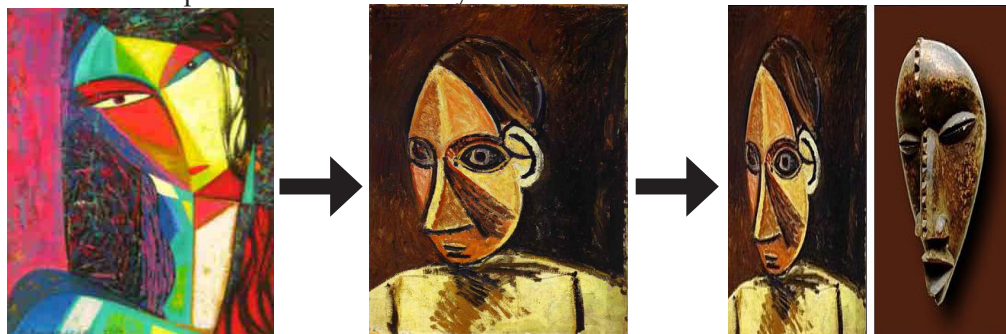
Fig.1 African sculpture   *Fig. 2 Pablo Picasso*   *Fig. 3 N. Adyaabazar*
                                 «Portrait of a Woman» 1941   *«portrait of a woman» 1996*

[1]Батчулуун.С (1996) *"Монголын уламжлалт зураг дүрслэл дэх уран сайхны хийсвэрлэлийн онцлогийг судалсан нь \Нэн эртнээс XVIII зууны жишээн дээр. дэд докторын зэрэг горилж бичсэн зохиол.* Улаанбаатар хот. 23-р тал.

But when creating a work of art, you should avoid imitation as much as possible. This phenomenon appeared in the history of the development of our art. In other words, the mentality of imitation has developed in Mongolian modern painting. In the early portrait works of artist Adyabazar, the western style is quite visible. For example: Pablo Picasso's portrait work was inspired by African sculpture, while artist N. Adyabazar's «Portrait of a Woman» \1996\ had a very similar appearance, style, and design. In the artist's work, the events of life are clearly visible, as they are all divided into many different crystal shapes and moving lines, and it is quite common to see that they are mainly made of bright yellow, red, pink and other composite colors on a blue, blue, green background. In the early works of the artist, before the introduction of new spatial abstractions, they expressed simple things that could be achieved by the minimum sense of human vision.

Picture 3. Enkhjargal.Ts "To live forever" 1968

A new art direction called Fauvism was born when artists such as Albert Marcque began to create works with a combination of extreme colors. Fauvism is a movement that emphasizes bright colors, color variations, interplays, outlines, and simple lines and decorations such as children's drawings. Mongolian Fauvism, or bright colors and abstract imagery, was introduced by many artists. Among them, the work of artist B. Purevsuren «Bortogonon» (1990, 60x40) was highlighted. Artist B. Purevsuren is an artist who creates many types of works in the development of modern art, and his works are very unique in that they express free space rather than being bound by patterns. His work »Bortogons» is painted in the fauvist style, «Dance» 1910 by artist Henri Matisse, similar to the color and method of the work, but it is very different in its content, ideas and motives.

Artist Ts.Enkhjargal's paintings are abstract and brightly colored. In other words, he is an artist who has created an abstract design with a healing image and hidden meaning that can only be imagined in the mind. That's why he became known as a Mongolian surrealist artist. The artist's painting «Eternal» was praised at the time.

From the end of the 20th century, images with hidden meanings began to appear in Mongolia. Their strange images and meanings are highlighted in paintings as surrealism. Surrealism is French surrealism, meaning better than reality, which can be translated individually: on Sur, over. Realism means reality. Surrealism painting focuses on drawing mental phenomena that are not subject to human consciousness, such as dreams, visions, interests, obsessions, dreams, fears, etc.

The reason for the emergence of the surrealist trend is the «psychoanalytic» theory of Sigmund Freud, which makes the concept of «sublimation» the key. The expression «decadence» that reflects the world of things above reality is a surrealist art style. The pattern of decadence is mainly the solution of «dehumanization» aimed

at rejecting the benevolence of art. Surrealists seem to consciously use real images and objects as a method, but the structure of the image is read by «decoding» with an unconscious mysterious interpretation (interpretation). J. Lacan and other researchers continue to explain why this is the «structure of inner consciousness». Their works are unique from realism in that they imagine strange phenomena that have no basis in reality and can only be imagined in the mind, and strange phenomena that are broken, joined, grown, or formed by combining one object with another.

Classification of Mongolian modern art

In this article, we used hermeneutic and interpretive methods to study the classification of modern paintings.

When studying the category of modern paintings by hermeneutic method, we paid more attention to the problem of understanding than the problem of truth. In other words, when analyzing a painting, it is intended to be analyzed by its general parameters, such as the expression of meaning, color, paint, characters, their interrelation / realism, unrealism/, description, design, and features of the method.

In addition, when studying how the paintings used in our study correspond to the main features and principles of modern trends, we need to determine whether they belong to that trend in terms of color, paint, method, characters, and depictions, and whether they are consistent with the main features of the trends and why the painting is this way. The following issues have been studied and concluded. It includes:

1. What does the painting represent?
2. Which flow direction and which elements are drawn?
3. What is the relationship between characters and images?
4. What are the characteristics of colors and actions?

In an attempt to interpret the works of the modern art movement from internal and external aesthetic standards, without losing the value of each work, following the principle of equality, and expressing what psychological characteristics they reflect, the interpretation method was evaluated. Interpretation method is a method widely used in art studies to explain concepts and ideas of works of art. The ideology and values of artists and artists are often expressed as a psychological reflection of the person. Thus, knowledge of the artist's biography, history, and other factors may not be of much importance as a one-sided approach to the evaluation of a work of art. However, it is essential to understand the art in a comprehensive manner, as it is influenced by many factors such as the period in which the artist lived, the ideals of the time, the artist's opinion about the ideals, and the socio-economic conditions. Yes, we intend to conduct a multidisciplinary research within the scope of a single-topic research paper Classification criteria for selected paintings:

The paintings under study are analyzed and classified in detail. Examining each image, two or three flow directions were confused. Therefore, the features that are more dominant in the image are classified according to the direction of the flow. In doing so, the painting was based on the following criteria. It includes:

•   Narrative of meaning
•   Expression of color and paint
•   Characters and their interrelation /Reality and unreality/

- Visual and design features
- Main characteristics of the method.

Also, the hermeneutics were studied according to the question of whether the painting is consistent with the main features of the trend / color, paint, method or image representation/, why the painting is included in this trend. Question:

- What does the picture represent?
- In which direction is it drawn? Why?
- Interrelationship between character and imagery?
- Features of color and action?

It was studied according to the above-mentioned criteria according to the question of whether it contributed to the development of Mongolian painting. Concept solutions were also studied.

A concept is the main idea that arises from an artist's search for new things and can be a concept that can be followed in every situation of creating an artistic work.

In art studies, the term «concept» of art is often mentioned. But the most important thing is to consider what is the concept. A concept is an idea born in a person's mind. In other words, a concept is a main idea born from a hypothesis-conclusion and imagination.

The concept has many meanings, but in painting it includes many aspects such as: innovation, imagination, concept, abstraction, philosophy, image, point of view, impression, perception, solution, but the inner world of the artist and the feeling of the viewer are the most important. /Contemporary art is a dynamic combination of the following main features./

- The following concepts are directly related to the definition of the artist's inner world.
- Breaking stereotypes, boundaries, and contradictions
- Differences in creation methods
- Materials and technology

Modern art does not have a single goal or idea, it is not bound by «ism», but it is an art that addresses social groups such as individuals, families, social groups, and nations.

Meaning of painting:

- Composition- Space /function, movement/
- Methodology- Manufacturing solutions Materials and invoices
- Flow direction
- Character-Shape and Proportion
- Color
- Rhythm frequency
- Equality and inequality can be explained.

Finally, the process of creating an idea to a work can be called a concept

For example: Artist Do. Bold «Let's analyze the work of a woman taking a bath.»

- Meaning – Eye or naked body is painted as an abstract art element.
- Composition- Vertical format is designed with symmetrical expressions.
- Methodology - textural and liquid flowing, dissolved entries were used and created by intense brushstrokes.

- Current direction- includes the type of abstract painting.
- Character - on the emphasis of the naked body of the woman, the solution and life of the room are expressed in color.
- Color – the work is depicted in warm colors and is enriched with cold blue, bluish colors and dark colors of darkness. This is a spatial solution. The expression of the girl's body is more than the face, and the emotions of the artist can be seen in the random color of the background color brush

In this part of the study, we aimed to study the categories of modern painting: using the works in the collections of the Mongolian Art and Painting Gallery, we aimed to conduct research in each direction of modern painting.

The Mongolian Art Gallery is a public service organization established in 1991 with the aim of introducing contemporary visual art works to the public and providing aesthetic and artistic education to the audience through visual arts.

The gallery stores more than 4,000 works of art of all kinds, such as paintings, sculptures, carvings, carvings, embroideries, embroidery, needlework, etc., created by talented artists from the time of the victory of the People's Revolution in 1921 until today. It is a cultural institution that creates and preserves the history of our country by enriching its treasury with the best works of visual art every year. More than 4,000 works are stored in the Mongolian Art Gallery. 1197 of them are paintings. When these paintings are classified into realistic and modern, there are 605 realist paintings and 592 modern paintings.

Considering the realist paintings by genre in the Mongolian Art Gallery, 157 (21%) portraits, 331 (46%) nature paintings, 171 (23%) portraits, and 61 (10%) other works are preserved. According to the research, nature painting has a high percentage.

Of these, a total of 720 works drawn before 2010 were classified using realistic visual methods.

Mongolian realist paintings
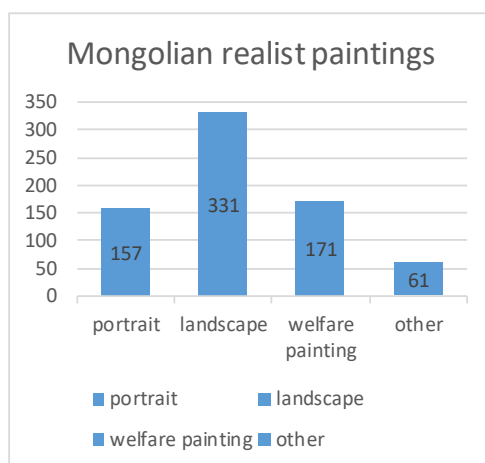
In the study of realist paintings: 157 portraits, 331 landscapes, 171 welfare paintings, and 61 other works. According to research, natural painting accounts for a high percentage. As a result of a detailed study of the above graphic calculations, the features of realistic painting are:

1. In their paintings, the artists chose a subject that addressed the most important issues of the time, aimed at educating the masses in the ideology of the revolution. These works, which praised the ideology of the revolution, were closely linked to socio-political policy.

2. The subject of fine arts at that time was a social realist depiction of the labor, life, party policies, and social changes of the common people.

He also painted traditional oil painting techniques with modern themes.

3. Portraits of famous politicians, good herders, labor heroes, famous artists, and

actors occupy a prominent place.

4. Colors and expressions of natural beauty occupy a large part of the art gallery.

5. Pictures of Abstract Thought - Mongolian traditional rituals, abstract concepts, geometric representations, and colors were used to express many things.

Images of abstract thought include modern and contemporary arts. Modern art is studied in detail in the works of 1990-2009.

To study the development of modern art in detail, two types of research were conducted: 1990-2001 and 2002-2009.

This is because, in 1950-1990, modern painting accounted for a very small percentage, while in 1960-1990 it accounted for the same percentage.

For example, to study the development of Mongolian art in 1950-1990, a total of 1197 paintings were classified into modern and realistic.
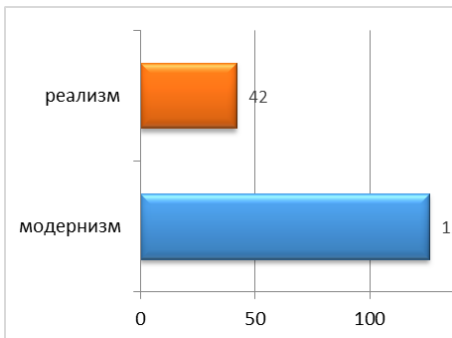
Modernism-592

Realism – 605

However, the development since 1990 has been periodically studied in detail.

From 1990 to 2001, 169 televisions were surveyed.

Modern painting-126

Realism-43

In the 1991-2001 survey, 75 percent of the paintings were modern paintings, which means that modernism began to develop in Greater Mongolia in the 1990s. We also tried to categorize this year's contemporary paintings by the mainstream.

- Abstract-43
- Impressionism - 16
- Cubism-4
- Fauvism - 9

- Surrealism - 6
- Expressionism - 3
- Neo-expressionism -9
- Post-Impressionism -31

Studies show that post-impressionism and abstract and impressionist currents account for the largest share. Post-Impressionism is more developed than the following four currents. These include:

1. Symbolism
2. Nabism

3. Pont Avenue School
4. Synthetism

1991-2001 modern paintings
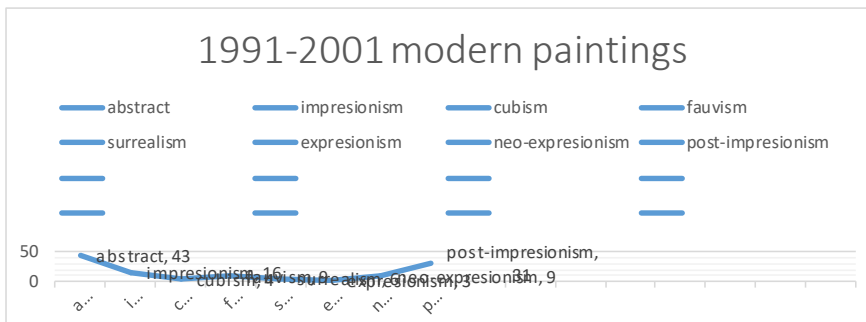
Symbolism's predominance in these four sects is a clear example of Mongolians' respect for and value of their traditions. It has been observed in the course of the research that it is reflected in his work. The works, which were considered by many people, such as religion, horses, homeland, relatives, etc., were unique in that they distorted the image and symbolized the meaning and sexual symbolism. Impressionism also prevailed, and Allah Prima prevailed..

A total of 247 modern paintings were analyzed.

- Abstract-87
- Impressionism - 11
- Cubism-12
- Fauvism - 23
- Surrealism - 25
- Expressionism - 7
- Neo-expressionism -18
- Post-Impressionism / Synthetism,

Pont Avena School / -25
- Symbolism -18
- Nabism-7
- Animalism - 6
- Futurism - 1
- Pointilism - 3
- Primitivism - 4

Table 2. Classification of modern paintings created in 2000-2009
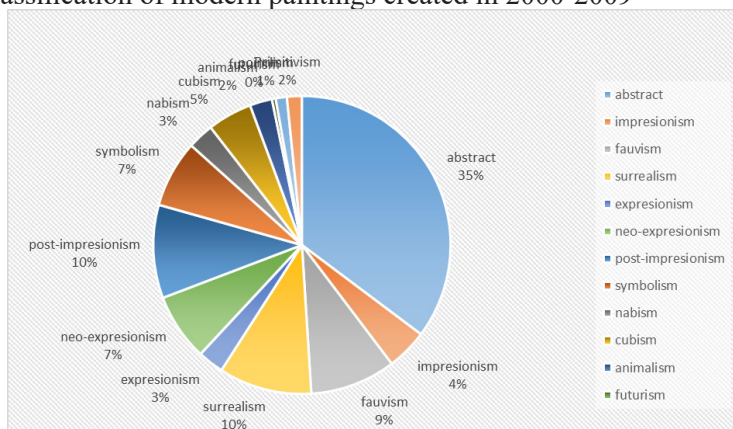
In a study of modern paintings created between 2000 and 2009, 35%, or the highest flow, was abstract.

In a study of Modern paintings created between 2000 and 2009, 35%, or the most frequently painted trend, is abstract.

The development of Mongolia's modern trend was privatized through dynamic research.

In 2001-2010, abstract painting increased by 44 times or 1.2 times (102%) compared to the previous 10 years.

This growth was the main reason for the increase in the number of this type of painting, as most artists began to create their works in this direction.

The number of Impressionism paintings has decreased by 5 or 33% compared to the previous 10 years. Because in the field of painting, realism has evolved from impressionism, and further from impressionism, abstract and thought-pro-

voking paintings have emerged. These changes were the main reason for the decrease in the number of this type of painting due to factors such as the fact that artists were influenced by the wave of modernization and the trend of polarization. Between 1990 and 2010, the number of Cubism paintings increased by 8 or 3 times. The main reason for the increase in this type of paintings is that the works of artists such as N. Adyaba-zar and Do.

The number of Fauvism paintings has increased 1.5 times in the last 10 years. The increase in the number of paintings of that type was mainly influenced by factors such as the increase in the number of artists who preferred saturated bright colors and the rapid development of thinking.

From 2001 to 2010, the number of Surrealism paintings showed the highest increase (316%) compared to other types of paintings compared to the previous 10 years. The increase in the number of surrealist paintings in recent years is directly related to the selection of individual artist's paintings every year, similar to cubist paintings, and due to factors such as the increase in the number of surrealist painters. For example: artists Ts. Enkhjargal, Ts. Monkhjin, J. Baasanjav, Sh. Dashdejid, Ts. Tsegmed, etc. can be named.

Post-Impressionism was the 8th most popular category in the period 2001-2010, with a 25% increase. The number has decreased by 5 or 33% compared to the previous 10 years.

In this way, the following results were seen in the dynamic research by classifying some works of Mongolian modern art. It includes:

1. The works of Mongolian modern art created in the years 1990-2010 have seen a lot of development and evolution, and certain directions have been formed.

2. I was able to clarify current trends that were the main focus of Mongolian modern painting, which makes it possible to use them in future research.

3. Our research has shown that some modern trends in Mongolian painting have become stagnant and stagnant in terms of development. One of the opportunities for the development of such streams lies in the selection of works from the national repertoire in many streams and their unique styles.

In a word, the results of the dynamic study showed us that the trends of abstract, cubism, expressionism and surrealism in Mongolian modern art are at a higher level of development. Based on the results of this dynamic research, we are trying to compare and strengthen the findings of leading researchers in Mongolia.

Table.6 Grounds for strengthening the classification of Mongolian modern paintings

Modern trends	Philosophical reasoning	Basic concepts and content ideas	Criteria and indicators:			
			Color	Composition	drawing technology	Meaning and content
abstract	According to Wassily Kandinsky: Content and ideals of the work "Intellectuality in Art".	In painting, he refuses to depict reality and characteristics, and aims to express his meaning and thoughts through the harmony of shapes, colors, spots, and lines.	The colors are drawn freely, such as Hansan, bright, and blended.	Dis-composition or non-composition - the composition is represented by the play of colors without figures and bodies. Some abstract paintings use geometric shapes	It is subject to free forms of action, such as radiation, dissolution, and clouding.	Color is considered from the point of view of how it affects human thinking, and the artist's sense of color is important.
Cubism	John Elderfield's Conceptual Theory of Art	It is characterized by breaking and analyzing the image of things and introducing abstract images.	Color nuances are often used.	Because of the use of geometrical figures and the broken representation of things as if they were seen from many angles, they are created with many compositions such as symmetry.	Analytical cubism, which is more developed in Mongolia, is painted with crystal-like fragmentary representations.	Cubism painting focuses on reality and enriches its meaning with the rhythm and distortion of images.
Expressionism	J. Sartre-existentialist philosophy	It is a flow that expresses negative thoughts and negative energy.	Often painted in cold colors.	It is composed in many ways, such as symmetry and asymmetry, vertical and horizontal compositions, which do not give much importance to the compositional solution.	Painting technology is free.	It is the flow that gives the main importance to the meaning. The characteristic of this movement is to exaggerate negative energy such as social pressure, depression, frustration, and stress.
Surrealism	Derived from Sigmund Freud's "psychoanalytic" theory, "sublimation"	It is aimed at drawing mental phenomena that are not controlled by human consciousness, such as dreams, visions, interests, obsessions, dreams, fears, etc.	Colors such as warm, cold, saturated and bright are displayed differently.	Conceived in secret. A movement that values hidden meaning, not knowing where and what is happening.	The characters and characters are quirky, but the action is tight and well-illustrated.	The search for a completely new, unique character is aimed at drawing something that does not exist in reality.

Table.7 Reinforcement No. 2
Rationale No. 2, reinforced by the criteria of the trend of modern painting

№	Mongolian modern art features, some representatives	Researchers who defined some trends in modern art			Confirmation rate
		Researcher Ch. Boldbaatar	Researcher T. Erdenetsog	Researcher T. Uranchimeg	
Abstract	Mongolian abstract painting used bright, bright colors to depict fictional figures in mostly free-flowing, undefined forms. Main representatives: Dr. Bold, Ch. Boldbaatar,	https://tilo-work.blogspot.com/2012/01/blog-post.html - In the interview, he identified himself and Dr. Bold as abstract artists.	Ts. Erdenetsog (2006) "Color harmony of 20th century Mongolian painting" Ulaanbaatar city. On page 75, it is said that the artist Do. Bold creates works in the abstract and cubism trends.	Uranchimeg.Ts (2018) Selected articles on Mongolian visual arts studies 1993-2018. Ulaanbaatar city. On page 80 of "Admon Print", Ch. Boldbaatar and Do. Bold artists were considered as abstract artists.	The concept of 3 researchers is 100% consistent with our research.
Cubism	When creating new art paintings, our artists are developing analytical cubism, which combines the characteristics of color copying and psychological effects discovered by western and eastern scientists. Main representative: N. Adyaabazar	Ch. Boldbaatar (2013) Contemporary art - The future of Mongolian art // МУС, МХСС ЕШ-бииг. On page 55, N. Adyabazar called the artist a cubist artist.	Ts. Erdenetsog (2006) "Color harmony of 20th century Mongolian painting" Ulaanbaatar city. On page 75, it is said that the artist Do. Bold creates works in the abstract and cubism trends.	Uranchimeg. Ts. (1999,04,01). Vanguard means ahead. No. 61, on page 3, it is said that artist N. Adyabazar creates cubist paintings.	The concept of 3 researchers is 100% consistent with our research.
Surrealism	Surrealism is the representation of things that do not exist in real life in paintings. Main representatives: Ts. Enkhjargal, O. Erdenetsogt, Ts. Tsegmed	Surrealist painting has not been researched.	Ts. Erdenetsog (2008) Surrealism in Mongolia-2. Artwork album, Ulaanbaatar city. On page 2, Ts. Enkhjragal, Ts. Tsegmed, Ts. Erdenetsog, and R. Lhamjav are mentioned as creating works with surrealism.	Uranchimeg.Ts (2018) Selected articles on Mongolian visual arts studies 1993-2018. Ulaanbaatar city. "Admon Print" on page 80 It is said that Ts. Enkhjargal, Ts. Enkhjin, and Ts. Munkhjin create works in the surrealism trend.	The concept of 2 researchers is 100% consistent with our research.
Expressionism	It was observed from the research process that the expressionist painting developing in Mongolia aims to depict the social situation and the artist's negative thinking based on traditional thinking. The tone of the works of the same artist is often different, and this does not mean that they have not developed at all. "Freedom from Expectations" by S. Sarantsatsralt, "Punishment" by Y. Bulgan, "Destruction" by T. Bold, "Portrait Composition" by D. Ganbold	Ch. Boldbaatar. (2008) "Tracing and interpreting contemporary art thinking style, language and structure" Ulaanbaatar. Many artists created works in the expressionism movement, which overlapped with ours.	In the book "Color harmony of 20th century Mongolian painting" (2006) on page 77, it is written that the artist R. Duinkhorjav is the main representative.	Uranchimeg.Ts (2018) Selected articles on Mongolian visual arts studies 1993-2018. Ulaanbaatar city. On the 31st page of "Admon Print", avant-garde art was discussed, and it was said that some of the works of visual artist Y. Bulgan reflected the anxiety and frustration.	The concept of 3 researchers is 75% consistent with our research.

Researchers who have made a valuable contribution to Mongolian art studies in the course of their research have rarely studied the classification of modern paintings. Most of the researchers included it as a typological painting of thinking and considered the analysis of the work as a preliminary study. A number of scholars such as Ch. Boldbaatar, Ts. Erdenetsog, Ts. Uranchimeg, O. Sosor, M. Batzorig have researched modern painting, but the historical overview has been studied more.

When Mongolian modern painting is considered from the end of the 20th century to the beginning of the 21st century, it can be observed that the artists are still developing the spirit of tradition and innovation in art and the spirit of imitation. In doing so, it was important not to fully express the basic concepts of the modern trend, but to introduce their own style into art.

Modern Mongolian painting from the end of the twentieth century to the beginning of the twenty-first century shows that artists sought to incorporate tradition and innovation into art. In doing so, they emphasized the need to incorporate their own style into art, rather than expressing the basic concepts and principles of the modern trend. As a result, Mongolian painting began to show the development of a free style from the beginning of the 21st century, but modern works proliferated. As a result, there are a number of misconceptions in society. It was accused that modern painting was easy to draw, that modern painting was meaningless, and that modern painting was painted by unskilled people.

The reason is that the young artists of that time lacked knowledge of modern art. However, as time went on, artists around the world began to explore the nature of contemporary and contemporary art.

As a result, the quality of art has increased, and the best works have been depicted, expressing the artist's ideas and inner feelings, which has enabled the development of modern art. The minds, imaginations, and fantasies of "modern" artists immortalized in the history of world art have been not only miracles, but also special subjects in the philosophy of art and the psychology of art. That's why each trend is different and has its own concept. However, in the modern art of each nation, the style of the nation is often reflected in each element.

In art, national and classical styles coexist in a certain proportion.

Mongolian painting also reflects this phenomenon to a greater or lesser extent.

Table 3. The meaning of the "monnalism"
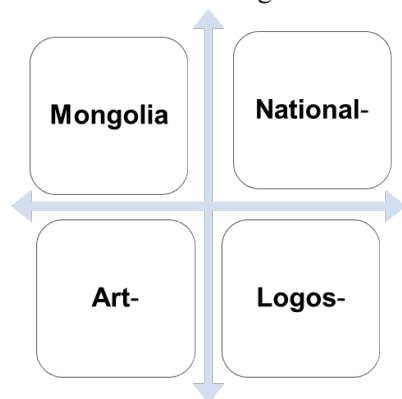
Mongolian thinking includes many things, such as the issue of Mongolian blood and ethnicity, and the depiction of nomadic life in modern Mongolian painting has begun to develop. We call it «National Painting Modern Painting». On the other hand, the so-called "Monnalism / Mongolian National, Art, Logos /" began to develop in the 1990s. For example: Artist Ts.Munkhjin Pictures-181, 81 paintings can be mentioned.

Monnalism can be seen in the word structure of the flow. In other words, the name is derived

from the meaning of the Mongolian national intellectual art, and can be understood as an art based on the Mongolian mind, which reflects the national style.

Mongolian painting is considered to be rich in intuition and humor, which is reflected in modern painting. This implicit meaning is also reflected in the current of monnalism.

The study found that the development of images with national patterns and elements in modernist terms was in some ways more appealing to the audience. Therefore, we need to introduce and understand modern painting, which includes monnalism or the Mongolian national tradition

Some artists and craftsmen agreed. For example, Do. Bold, the main representative of the development of modern art today, said, "On the one hand, the national trend in Mongolian fine arts has been broken. It's important for the national art to be what it used to be, so let's try to put what should be in the first place, "he said.

Female character: A twentieth-century Mongolian woman with a haircut, a fist deel, and Mongolian shoes.

The Mongolian ger is played as an assistant, and the door depicts a sunny summer day, reflecting the light of a dark night.

The left hand of the male figure is depicted in two different colors. It symbolizes man's hard work and strength, and is an abstract representation of exaggeration.

The basis of the painting is monnalism, which reflects the above-mentioned patterns and represents the Mongolian way of life, Mongolian style and Mongolian culture.

The main differences from modern art in other countries are traditional thinking, imagination and nationalism. Artist Do. Bold said, "On the other hand, many trends have been coming in since the 1990s, but like a newborn child, I don't know where to go, I can't imagine what will happen next, I just float in a strange and directionless way. . " describes the development of modern art today. He pointed out the lack of a theory of the concept of directionlessness, and stressed the need to inculcate and propagate the national style in the artist's mind. Therefore, we hope that our research will play a small role in promoting "Mongolian-style modern painting" or monnalism in the minds of artists.

Conclusion

One of the many new phenomena defining the development of Mongolian painting is the spread of modern painting. The following conclusions are made within the scope of this research.

1. The beginning of Mongolian modern painting developed in 1950-1980, and in addition to imitating borrowing methods, Mongolian painting gradually moved to abstract art by incorporating national patterns and combining tra-

dition and modernity.

2. Due to the influence of the socio-economic modernization phenomenon, the thinking and thinking characteristics of artists have become open, and the concepts of artists have evolved and been renewed.

3. Each evolution and innovation has presented us with different and unique works based on the inner thinking of the artist, the surrounding world, standards, and quality of being.

4. Analyzing the work of artist T. Enkhjargal by four methods of neo-aesthetics, we can see that the content and thinking of modern art have changed a lot, and our research has shown that it is possible to use methods such as exaggeration, isolation, and abstraction solutions simultaneously in one work.

5. This analysis of modern art suggests that any modern work can be analyzed and interpreted using the method of neuroaesthetics.

6. Analyzing the selected modern works of art in terms of color, imagery, composition, and expression, the works were not only painted with saturated bright colors, but also had a combination of blended colors and cool warm colors. It was seen that it was shot in a balanced way, and it was created with an eloquent and unique tone that highlighted the characters.

7. The modern paintings stored in the collections of the Mongolian Art Gallery were divided into 1990-2000 and 2000-2010 in terms of development. As a result of the study, abstract, impressionism, and post-impressionism trends were more reflected in the works of Mongolian modern paintings of 1990-2000. It was found out that abstract, fauvism, surrealism and symbolism were more depicted in the works of 2000-2010.

8. The dynamic study of Mongolian modern painting revealed the main current directions and can be used in future research.

9. According to the dynamic research, some modern current directions have shifted to a stagnant and stagnant state in terms of development. Therefore, it is considered necessary to search for the factors for the development of those trends, and to select and transfer works that are selected for the national repertoire.

10. 10. As a result of the classification of modern paintings stored in the collection of the Mongolian art gallery, it is necessary to study the images highlighting the "Mongolian typology".

11. 11. Today, modernism in the world has already moved to post-modernism and contemporary stage, while Mongolian modern paintings and works are moving towards this direction relatively slowly. We conclude that this not only shows that the concept of modern art has a stable position in Mongolian visual arts, but also emphasizes the need to expand the research and analysis of modern art.

Finally, it should be noted that by the period of 1990-2010 in the historical development of Mongolian art, the position of modern art has already been established, and the majority of famous Mongolian artists continue to create their works following the content and ideals of modern art. Some modern Mongolian paintings have a more national style and traditional mentality than paintings in other countries. Traditional

thinking is reflected in a variety of phenomena, including the Mongolian way of life and the overt and covert depictions of Mongolian customs and culture. We call this trend monnalism in art studies.

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RESEARCH OF THE EMOTIONAL CHARACTERISTICS OF MONGOLIAN CHILDREN'S HORSE ILLUSTRATION AND IT'S THE EFFECTS

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Abstract

It is difficult to understand the changes and development of the Mongolian people's lifestyle and mentality without the presence of horses. The reason is that from ancient times, Mongolians utilized horses in their hunting, carried out warfare with their valiant horses, prepared the physique and environment of the horses for racing, as well as educated the children from a younger age on how to care for them, compete in horse races, and maintain the culture of horses by accompanied training. Thus, with the horse imagery found in archaeological rock art findings, a theme of HORSE depictions seen in children's artwork today has become a staple concept. Therefore, through children's interest in drawing horses and their artwork, it is possible to study how the traditions of the Mongolian horse culture, the knowledge behind it, and its utilization affect social life changes.

By viewing the importance of how horse depictions affect traditional visual thinking, how methods are developed based on circumstances, the mindset behind the artistic expression of today's youth, and how it affects their skillset, an analysis was made of the meaning and symbolism, composition, color, methodology, and ability to artistically express themselves through horse depictions within Mongolian children's artwork. This study was made on 1-8th grade secondary school students, the knowledge and theories provided in the various fine arts classes, environment, teachers, parental and guardian involvement, the traditional mindset behind children's horse depictions, and its effects on their skillset. More specifically, an in-depth analysis was made of the artwork of the students between ages 6-13 that participated in the painting competition.

Furthermore, this work could be of help in the academic agenda and methods used in educating our youth in the traditions of Mongolian horse culture which has been passed down throughout the nomadic generations.

Keywords:

Horse depiction, Horse culture, Children's drawing, Children's artwork

Introduction

Every nation develops by educating the next generation, developing each other, accumulating knowledge, improving it, and passing it on from generation to generation. For Mongolians, a nomadic culture, the way of dealing with the reality of visual arts education has been passed down from generation to generation, with traditional, ritualistic, and unique national relations.

Scientist D. Dashkhuu once noted, «Mongolians without special training, with the exception of discipleship training, emphasized the importance of non-compulsory, non-coercive, practical education methods. Similarly, scientist N. Bavuujav's analysis states, «Due to the lifestyle of the nomads, it was not possible to gather numerous children in one room to conduct training like the present. It was more suitable to achieve the goal of academic training in the forms of «home school», «disciple training», and/or «self-learning». (Bavuujav, 2008, p.7). For Mongolians, the upbringing of young children has been considered in the principle of «Offspring after birth, a person after discipline» and this has been taught, written, and recorded continuously. The great philosopher and writer of the 19th century, J. Danzanvaanchi, wrote in his «Golden Teachings of the Enlightenment of the Duke's Century» that «...the blood is thin and the veins are light, if you do not teach them at the age of five, they will not receive the teachings past the age of ten, when strength and courage increase...». In addition, J. Danzanravjaa's «Soul Restoring» sutra states, «...When the sunlight is bright, it's best if there are no clouds. It's best to learn at a young age if you're not lazy...». These writings indicate the importance of educating and educating children at an early age. This is the process of cognitive development and 80% of human intellectual development is formed during childhood, according to scientists J. Piaget and J. Bruner, «At the age of 6-7, real action thinking, and at the age of 8-11, the simple level of thinking is compared, and logical thinking develops at the age of 11 and over» is consistent with (Otgontuya, 2017, p.218) the writings.

As for the «traditions» of Mongolian children's art-making development, there is a clear influence from their environment and the lifestyle they were brought up in. In addition, the games that were played, nomadic migrations, the names and states of the land where they lived, and the nature and weather phenomena that they interacted with gave them the knowledge and experience of visualizing through imagery, color, and various physical rituals. For instance, from a very young age, they begin to develop the ability to recognize, differentiate, and memorize animals with various types of coats, coloring, and physicalities. In another instance, nearly every Mongolian child grew up building houses with stones. This may be proof that they were developing the act of visualizing by representing objects and animals with similar shapes.

In this way, the tripartite relationship between nature, man, and animals is the main «tool» for the development of Mongolian children's visual thinking, which is connected with the philosophy that methods are complementary and symbols are created by methods. Therefore, Mongolian children are different from children of other countries due to the fact that they have a traditional foundation of empirical knowledge in the tradition of pastoralism and nomadic civilization.

Research Methodology

From a total of 2168 students' works, the best 80 works with horse imagery were selected and the design, description, and meaning of horse images in children's paintings were compared and analyzed. The methods used to analyze the artworks of students aged between 6-13 were the hermeneutic analysis method and the mathematical statistics (SPSS) method. Since the child's creative activity begins with their freedom to express their desires, their current state of mind, emotions, and inner worlds, these unique artworks begin to form when it is under a specific topic or subject.

Image 1. The number of students who participated in the «Children's World» contest in 2014-2018 by age group
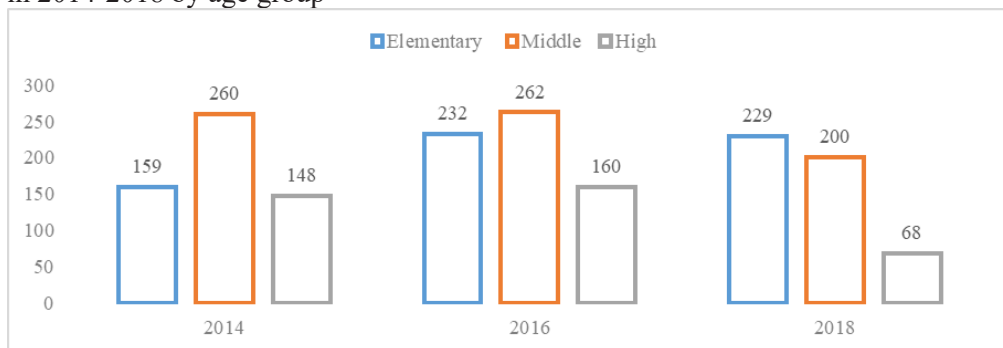
In the 2011 and 2012 «My World» competition, 382 students' artwork and 2100 artwork was submitted. Within these submissions, works with horse depictions totaled up to 1006 pieces which consisted of 47.9 percent of the students that participated in the competition. However, as seen from the chart in /Image 2/, while the artwork with horse depictions makes up the majority of the themed paintings, the number of these works is decreasing due to the acceleration of urbanization with the modern age with families moving into the major cities resulting in a decrease of animal husbandry.

Image 2. Number and percentage of works with horse depictions submitted to the «My World» and «Children's World» art contests
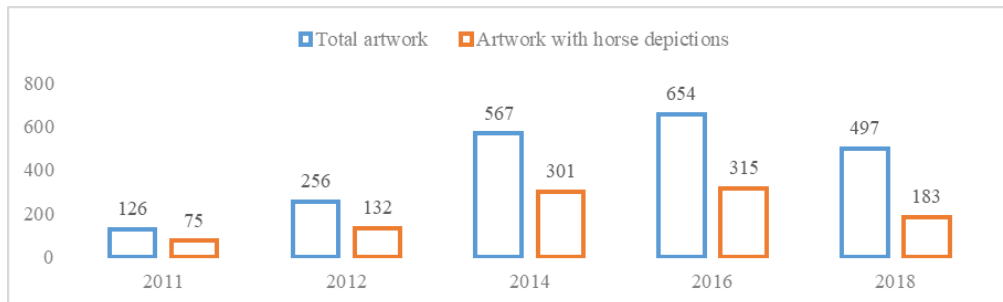
Many teachers from urban and rural areas prepared thousands of students to participate in the «Children's World» painting competition. The best teachers successfully led their students and won dozens of medals at international exhibitions such as «Shankar» in India, «Rose of Lidice» in the Czech Republic, «YA JIVU MIR» in Russia, «Rainbow» in Hungary, and «Kanagawa Biennale» in Japan.

Within these 11 types of competitions, a total of 251 works of art were by Mongolian children and O. Natsagdorj was the individual that scored them all alongside the thousands of works submitted in the domestic competition. He stated, "While scoring the works within the international competitions, it was clear that Mongolian children's art and drawing skills have already reached an international level.

It was concluded (Bayarmagnai, Tseden-Ish, 2018, p. 195.) that Mongolian children's work is unique, with its sunny and bright color harmonization, contrasts, how

various events are depicted from multiple points of view within one plane, the main subjects being depicted in an exaggerated way, and use of symbolism. These characteristics were not only unique in comparison to other Asian and Middle Eastern but to those of works presented from farther parts of the world as well.

Out of over 2,000 artworks submitted to the international exhibition, a little over 120 works with horse depictions were selected and out of the 2,100 works submitted to the «Children's World» competitions held between the years of 2011-2018, a little over 1,000 works with horse depictions were selected. Of these selections, a total of 80 artworks from children between the ages of 6-13 were included in this research. More specifically, 10 pieces of art from each age group were studied (5 from the countryside, 5 from the city). /Table-3/.

Table-1. Scoring system

	д/д	Scoring system	Results				
			1 score	2 score	3 score	4 score	5 score
Ability to visually depict	1	Depicted the horse within the center	Opposite depiction	Asymmetrical	Angled	Symmetrical	Wide depiction with numerous horses
	2	Perspective and spacing used	None	Below Average	Average	Good	Great
	3	Fine art materials used	Colored Pencils	Felt Pen	Crayon / Pastels	Watercolor	Acrylic
	4	Use of color	1 - 2 colors	3 - 4 colors	5 - 6 colors	7 - 8 colors	Over 9 colors
	5	Composition	None	Below Average	Average	Good	Great
Expression of thought	6	Main subject depiction	All were depicted in a small size	Humans and horses were depicted in a medium size manner	Humans and horses were depicted in a larger dominate manner	Human was depicted in a larger dominate manner	Horse was depicted in a larger dominate manner
	7	Abstraction and imagination used	None	Below Average	Average	Good	Great
	8	Secondary subject depiction	None	Other	Horses included	Friends included	Family and themselves included
	9	Environment and atmosphere depiction	None (single color)	5 traditional animals (ижил сүрэг)	Objects (homes, fences, etc.)	Nature (rivers, mountains, etc.)	Depicted all
	10	Psycological elements	Conflicted	Indifferent	Content	Ceremonial	Joyful

In the analysis of the 80 works, the following skills were taken into factor, the ability to use color, composition, materials, distance and spatial expression, and creative thinking to depict the main and supporting subjects within the image. More specifically, the creative liberties the children took to emphasize certain emotions, characteristics, and the significance of those subjects. The following evaluation criteria were developed to analyze the expressions of their inner mentality, such as abstract thinking and artistic imagination. As shown above, /in Table2/, the performance was measured by two criteria: «ability to visually depict» and «expression of thought», and the connections between these two indicators are direct and significant.

In other words, there is a statistically significant conclusion (Sig. (2-tailed)=0.006) that when the student's ability to visually depict increases, the expression of thinking increases as well.

Table 2.Correlation coefficient

		ability to visually depict	Expression of thought
ability to visually depict	Pearson Correlation	1	**.306****
	Sig. (2-tailed)		.006
	N	80	80
Expression of thought	Pearson Correlation		1
	Sig. (2-tailed)		
	N		80
**. Correlation is significant at the 0.01 level (2-tailed).			

In addition, whether there are differences in the characteristics of these children's work as they progress in grade or age was analyzed.

If you look at the results compared with the ability to visually depict and the expression of thinking: /Table 3/: /Хүснэгт-5/

Table 3. Age-specific differences in ability to visually depict

Results	Ability to visually depict								
	Age 6	Age 7	Age 8	Age 9	Age 10	Age 11	Age 12	Age 13	Total
Number of Participants	10	10	10	10	10	10	10	10	80
Mean	18.5	19.0	18.1	19.4	20.2	18.9	19.7	21.5	19.4
Median	18.0	19.0	18.0	20.0	20.0	19.5	19.5	22.0	20.0
Minimum	15.0	16.0	13.0	15.0	17.0	16.0	16.0	20.0	13.0
Maximum	22.0	23.0	23.0	23.0	24.0	20.0	24.0	23.0	24.0
Std. Deviation	2.3	2.3	2.6	2.9	2.0	1.4	2.3	1.2	**2.3**

As seen from the table, on average there is a 77.6% competition rate (19.4 points) and with more than 50% of all students having an 80% competition rate it indicates the amount of time consumption and labor intensity that goes into the competition. The lowest competition rate was 52% (13 points), and the highest was 96% (24 points). The age with the highest deviation was 9 years and the age with the lowest deviation was 13 years.

Table 4. Age-specific differences in mental expression

	Expression of thought								
	Age 6	Age 7	Age 8	Age 9	Age 10	Age 11	Age 12	Age 13	Total
Number of Participants	10	10	10	10	10	10	10	10	80
Mean	18.2	18.6	15.5	15.3	18.8	15.6	16.3	13.8	16.5
Median	18.0	18.0	15.0	14.5	19.0	15.0	15.0	14.0	16.0
Minimum	14.0	12.0	12.0	13.0	11.0	11.0	10.0	10.0	10.0
Maximum	22.0	24.0	22.0	21.0	24.0	20.0	25.0	18.0	25.0
Std. Deviation	2.5	3.5	3.4	2.3	3.8	2.7	**4.7**	2.4	**3.6**

On the other hand, the expression of thinking performance rate was 66% on av-

erage (16.5 points), and more than 50% of all students have a performance of 64% (16 points). The minimum level was 20% (10 points) and the maximum level was 100% (25 points). /Table-4/

In comparison to ability to visually depict, there is a relative deviation and the highest deviation was from a 12-year-old (4.7). According to the scientists who studied the intellectual development of students using D. Wexler's method, « 12-year-old students have an IQ=119 when it comes to the level of intellectual development which is relatively higher compared to those in elementary school. (Myagmar and Tuya et al. 2016, p. 62).

The completion indicators for each age group against the average are shown in a diagram:

Image 3. ability to visually depict scores

Image 4. Expression of thought scores
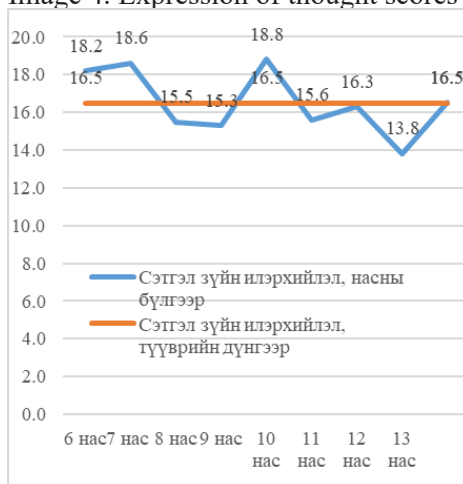
If we look at the same interval, we can see that 6-year-olds have a lower ability to visually depict, but high psychological expression and free thinking skills, while 13-year-old students have a higher ability to visually depict and low psychological expression. /Image 3, 4/

Correlation analysis shows that there is a direct and significant correlation between the performance of students' age and ability to visually depict, while there is an inverse correlation between age and the expressive ability of thinking. /Table 5/

Table 5. Correlation coefficient

		ability to visually depict	Expression of thought
age	N	80	80
	Pearson Correlation	.328**	-.297**
	Sig. (2-tailed)	.003	.007≤0.05
The regression equation		Y=16.2+0.33x	Y=20.9-0.46x
Explanation		ability to visually depict (0.33 points) increases by 1.32% when a student gets a year older. The regression equation and the regression coefficient are entirely significant	Expression of thinking (0.46 points) decreases by 1.84% when the student gets a year older. The regression equation and the regression coefficient are entirely significant.

Table 6. Results of correlation analysis

Model Summary					ANOVAᵃ					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Model	Sum of Squares	df	Mean Square	F	Sig.
1	0.328ᵃ	0.108	0.096	2.201	Regression	45.672	1	45.672	9.431	0.003ᵇ
					Residual	377.715	78	4.843		
a. Predictors: (Constant), age					Total	423.387	79			
					a. Dependent Variable: ability to visually depict b. Predictors: (Constant), age					

Coefficientsᵃ						Coefficientsᵃ					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta				B	Std. Error	Beta		
1 (Constant)	16.280	1.049		15.514	0.0	1 (Constant)	20.867	1.630		12.799	0.0
age	0.33	0.107	0.328	3.071	0.003	age	-0.458	0.167	-0.297	-2.747	0.007
a. Dependent Variable: ability to visually depict Y=16.2+0.33x						a. Dependent Variable: Expression of thought					

Table 7. Analysis of age-specific differences using the «t-test».

Categories	age	N	Mean	Std. Deviation	Std. Error Mean
Ability to visually depict	6	10	18.50	2.273	0.719
	13	10	21.50	1.179	0.373
Expression of thought	6	10	18.20	2.529	0.800
	13	10	13.80	2.440	0.772
General Score	6	10	36.70	4.111	1.300
	13	10	35.30	3.434	1.086

If you look at the table above, there is no difference in the average criteria and no difference in the overall score. /Table 7/ Here, when testing the hypothesis: H0= the basic hypothesis that the visual thinking of 6 and 13-year-old students is the same. Competing hypothesis H1= An alternative hypothesis was proposed that there is a difference in visual thinking between 6- and 13-year-old students.

Here, the competing hypothesis is supported by the statistical significance of difference (Sig. (2-tailed)≤0.005). / Table-14/ In other words, the ability to visually depict completion rate at age 6 was 74%, at the age of 13 it improved by 12% resulting in 86% completion. However, expression of thought decreased to 72.8% at the age of 6 and at the age of 13 it decreased by 17.6% to 55.2% completion rate at the age of 13.

Table 8. Test statistics

		Levene's Test for Equality of Variances		t-test for Equality of Means						
				t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.						Lower	Upper
ability to visually depict	Equal variances assumed	3.470	0.079	-3.705	18	**0.002**	-3.00	0.8097	-4.7010	-1.2990
	Equal variances not assumed			-3.705	13.513	0.002	-3.00	0.8097	-4.7425	-1.2575
Expression of thought	Equal variances assumed	0.101	0.755	3.958	18	**0.001**	4.40	1.112	2.0647	6.7353
	Equal variances not assumed			3.958	17.977	0.001	4.40	1.112	2.0645	6.7355

Independent Samples Test

The regression equation is confirmed by the fact that when students get a year older, the ability to visually depict increases by 1.32% (0.33 points). Also, if we look from a traditional teaching method perspective, we can consider the ability to artistically visualize as a "practice" since the human body is in itself a method. Additionally, the expression of thoughts can be considered a «methodology» because the mind, spirit, and soul are a form of art. This is in relation to the act of scientific methodology and traditional practical ways of knowledge being passed down and used in Mongolia. Therefore, both methods should be synchronized and when these two are well balanced, there will be a more probable chance for children to be both traditionally skilled and imaginative.

Conclusion

As a result of the implementation of research goals and objectives, the following conclusions are made.

- Mongolian children's artwork is not only different from those from Asian and Middle Eastern cultures, but also from various other parts of the world with their bright and sunny color harmony, the open plain design of traditional Mongolian paintings, which depicts many events from multiple points of view in one plane, and the symbolic representation and thought put behind the main subjects, which is often clearly exaggerated. It can be seen from the works that participated in the international children's art competition that they have a unique feature that is different from the works of other children.
- Since the artwork comes solely from the child's own being, we can see this as a product of thinking born from their own specific impressions. The characteristics of the child's personality and creative thinking are depicted within the work, clearly revealing the individuality of each child. The works submitted to the competition can be described as «Children's Artwork» because they are created as a result of the same lengthy process of thinking, imagining, and processing similar to professional visual artists.
- Studying 80 pieces of artwork from children between the ages of 6 and 13 shows an 80% completion rate which is an indication of the amount of time and effort

that went into participating in art competition. The age with the highest deviation was 9, and the age with the lowest deviation was 13. However, the expression of thought has a completion rate of 64%. The ability to visually depict relative deviation is high, the age with the highest deviation was 12, and the age with the lowest deviation was 13. At the age of 12-13, the following unique tendencies can be seen: the perspective, composition, and proportion are often accurate; the characteristics, symbolization, and colors used for humans and animals are generalized and imprecise; and the subjects and concepts they prefer to depict are more stylized.

- Looking at the same interval, 6-year-old children have a lower ability to visually depict but have a higher psychological inner expression and free-thinking ability. At the age of 13, the child's ability to visually depict is high while mental expression is lower. It was found that there is a direct and significant correlation between the students' age and their ability to visually depict, while there is an inverse correlation between age and expression of thinking. According to this, the following can be observed; every year they get older, students aged 6 to 13 have an increase in their theoretical knowledge and ability to visually depict, their ability to depict subjects realistically or METHODS improves. However, their natural children's intuition, free-thinking, abstraction, fantasy, and exaggerated imagery or INTUITIVE INTELLIGENCE are gradually lost. Research has shown that the students' talents have a more probable chance of even further development if both methods, classroom training and more hands-on training through ways like apprenticeship are combined.

- When illustrating a horse, elementary school students (ages 6-8) depict them in a generalized way, oftentimes in an outlined silhouette, place them predominately in the center of the image, and use colors and space in a free and loose manner. More free-thinking and instinctual mannerisms can be found in artwork from children of this age group. On the other hand, middle school students (ages 9-11) as a result of the Mongolian lifestyle, culture, traditions, environment, and visual arts training that assisted in the improvement in realist aspects like proportions, likeness, and movement of the horses. By this time, they have developed the ability to work with a theme or concept, mixed colors, and can produce artwork with deliberate exaggerations and abstraction while maintaining the accuracy of the subject.

- The research shows that in addition to the teacher's ability to pass on knowledge and skills, the child's drawing ability is affected by many factors such as their upbringing, parents' education background, psychological state, age, gender, living environment, reading material, and the entertainment consumed. For instance, children living in rural countryside areas are able to depict horses with a more accurate expression, which comes from the experiences they've had in real life. However, according to the quantitative results of the study, although there is little difference in visual depiction ability, students from urban city areas are better in terms of artistic exaggeration, abstract thinking, psychological expression, and richness of color. On the other hand, the works of rural countryside children illustrate real-life events, ethology, and horse behavior in a more detailed way. Thus, the child's living environment, family, culture, and traditional thinking are of im-

portance when it comes to art.

- Including horse illustration methods and knowledge of horses as a cultural significance as a separate lesson in the context of fine arts textbooks and academic curriculum will provide an opportunity to preserve the Mongolian traditional horse heritage and image depiction methods. Specifically, using horse typology for better visual perception and memory such as the realistic horse coat coloring, size, and proportion to represent the differences in age and body type. In addition, drawing the body structures, specific types of movements and steps like trotting and galloping will allow for not only artistic skills to improve but also maintenance of traditional customs and knowledge of the symbolism behind of Mongolian horse culture.

- It is appropriate to emphasize acquiring the ability to study and work independently for the following reasons: to stimulate Mongolian children's right-brained natural abilities, to develop the illustration and painting skills of students based on their natural abilities, to conduct fine arts education in a simple and understandable way, to adapt to the age and mental characteristics of students, and to develop the imagination of students. Therefore, if STEAM lessons are developed under the theme of «horses» which the general population is familiar with, Mongolian culture and customs can be introduced through horse culture. This at the level of visual creation and artistic level could result in artwork being produced with a symbolic meaning of «Mongol». Thus, students will develop a traditional Mongolian mindset.

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TECHNICAL THINKING DEVELOPMENT OF STUDENTS SOME RESULTS OF EXPERIMENT STUDIES

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Abstract

There is a tendency to believe that the speed of the country's development, which is beneficial from the economic point of view, and the scientific and creative approach with a certain step sequence, is directly related to the technical thinking of the individual. In this presentation, the level of technical thinking of the students was measured by the internationally recognized Bennett test. The purpose of the report is to determine the technical thinking of the students participating in the State Technical Olympiad. The importance of technical sports clubs and Olympiads in this field, which develop the technical thinking of students, can be seen. 95% of the students were male and 5% were female. Based on Bennett's test, which is an international method that determines students' technical thinking, the research was conducted and the results were explained.

Key word:

Technical thinking, Technical creation, Technical and Technological Olympiad, Design technology

Introduction

Thinking is the highest level of development of mental and cognitive processes and is a very complex activity. In the history of psychology, the study of technical thinking began more than a century ago. The term "technical thinking" was first mentioned by P. K. Engelmeyer in his work "Technical philosophy". IV industrial revolution, 5G technology, artificial intelligence. In the era of innovation and technological innovation, important fields of science for the development of technical thinking are mathematics, engineering, technology, and natural sciences. In this sense, the study of design technology is a science that studies inventions, designs, models, inventions, technical works, tools, ergonomics, bionics, and robots, so its study has the following significance. Russian researcher M.V. Mukhina said, "Students' attitudes toward things are formed within the framework of psychological and practical activities, so it is appropriate to include the development of their technical thinking, creative attitude, and skills in the core curriculum," and "The basic environment for developing technical thinking is general In his work, he emphasized that it is an educational school, improving the integration between subjects, learning and learning activities within the framework of the stability of the curriculum (Mukhina.M.V, 2003).

Main section

Researcher M. Liza studied the technical thinking of high school students in the United States and found that the performance of students who studied in a regular

course was significantly lower than the performance of students who studied in a specially tested teaching method. He emphasized that one of the important teaching methods for the development of technical thinking is the method of creative thinking (Liza M. Veiga, 2015). Researcher J. Gervai wrote in his work that technical thinking is developed by actively participating in activities in the learning environment (Gervai, 2012).
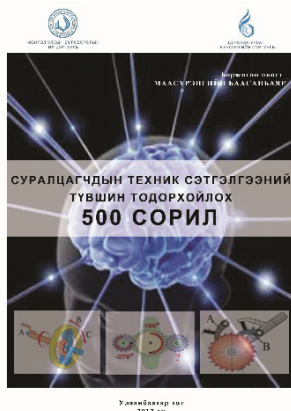
It includes:

♣ Understanding creative skills and applying the creative process will increase individual skills;

♣ Determine the scope of creative learning activities and learn from the experience of creative people;

♣ Develop creative methods and activities, search for interesting innovations, use techniques

♣ develop the ability to support learning and collaborative activities;

Regarding the tradition of developing students' technical thinking: The main direction of the government's policy to support the education of its citizens is to train specialists who can introduce the latest technical and technological training activities and then adhere to the policy of bringing them closer to the development trend of global education. The basic foundation of this policy will be laid from elementary school. It has been developed in many fields considering the improvement of technical and technological education level of high school students and technical thinking as one of the important and pressing issues for the development of universal technological education.

There are dozens of activities to develop students' knowledge, skills, and technical thinking. For example: The House of Young Technicians held technical workshops at its branch stations throughout Mongolia. At that time, technical circles were held according to a special program, and this was very important. By identifying talented students interested in technology and making them study in circles on a voluntary basis, by always involving them in the search for innovation, they develop technical thinking, develop the ability to apply the knowledge gained in general academic courses to design work, work independently creatively, and consciously choose their future profession. learning activities are directed.

It should be noted that technical circles at secondary schools cannot cover a wide range of subjects, and a small number of teachers who are interested in technology use their resources as a hobby. One form of combining these is the Technical Olympiad. MSUE and SFAT have successfully organized the Olympiad since 1996. Thanks to the Olympiad, dozens of engineers and technicians have been created, which shows how the level of technical thinking of the students who participated in the Olympiad has increased, and at the same time, they are gaining professional identity.

By identifying talented students who are interested in technology and making

them study in the circle on a voluntary basis, by always involving them in the search for innovation, they develop their technical thinking, practice the ability to apply the knowledge gained in general academic courses to creativity, work independently, and consciously choose their future profession. training activities are directed.

The ability of the teacher to choose the right teaching method and effectively organize the training is very important for the development of students' technical thinking through design and technology courses. Scientists from many countries continue to demonstrate the possibility of studying and evaluating the technical thinking level of secondary school students through their research work. The researchers use Bennett's test, an international method, in their research. Russian scientists continue to use Bennett's test in their research to determine the technical thinking development and thinking level of senior high school students and continue to prove it as a reliable and qualitative assessment method.

In the Olympiad competition held within the design technology course and its content, special tasks aimed at developing the technical thinking of students have been developed and the improved results have been used. In order to systematically implement this goal, in 2016, "500 tests to determine the level of technical thinking of students" were developed, published, made available to the public, and used for testing. For example: Russian researchers E. V. Kryajeva and Y. V. Khudoshin, using Bennett's test, recommended including technical thinking exercises and tasks in the criteria of cognitive and professional activity of teacher training students. Bennett's test, or the international method, is characterized by the fact that it tests intellectual abilities and operational habits, and is represented by a diagram depicting the activity. Advantages of Bennett's test are: - Evaluation method and question execution period are clear, - The presentation is simple and understandable (knowledge, understanding, problem solving, defining a scientific approach), - Several concepts, knowledge and skills can be assessed with one question. Bennett's test has 70 questions, the execution time is 30 minutes, and each correct answer is counted as one point. The level of technical thinking for high school students is defined as follows (Bennett, 1989). It includes:

Table 1

Very little They have simple knowledge, can only decipher terms, have difficulty in thinking about problems, have difficulty in explaining the phenomenon that occurs on techniques and tools, have only experience knowledge, and are weak in analyzing and calculating data patterns.

Table 2

Very high Fully capable of understanding and analyzing the working principles and structures, connections and settings of techniques and equipment under different conditions, good thinking speed, fully capable of analyzing the results and changing the situation, very good ability to calculate, plan and express risks in advance, Ability to work in a team, exchange opinions, and analyze and draw conclusions from other people's results.

Table 3

Average Ability to explain and experiment phenomena that occur on techniques and equipment, understand data and concepts, and calculate them methodically.

Research methodology

In this study, the Bennett Mechanical Comprehension Test (BMCT) developed by Bennett was used as a 70-question test task. Quizzes are tasks given in the form of a series of pictures with short questions. Answering these requires a certain level of development of spatial imagination, as well as general technical knowledge that many may encounter under normal circumstances. The whole test is aimed at measuring the level of the examinee's accumulated experience and ability to work with appropriate technical knowledge, technical equipment and tools, as far as they are aware. As shown in the figure below, male students (out of 70 tests) score 39-47 as high and above 48 as very high, while female students score as high as 28-34 and above 35 as very high technical thinking. Based on this methodology, a total of 108 students of 4 types of students participating in the technical and technological Olympiad were surveyed and the results were explained.

Table 2

Group	Level of technical thinking				
	A lot less	less	Average	Height	Very high
Men	26	27-32	33-38	39-47	48
Women	17	18-22	23-27	28-34	35

Experiment results

In the test, the 4-year test of students participating in the design technology and technical sports of the State Technical Technology Olympiad was used in 2016-2019. Test results of the technical reasoning test included in the theory test. Theory exam structure: - Contents of design cartography - 15 min - Thinking tasks - 10 min - Technical tests and problems – 5 min Bennett's test is based on a methodology that calculates results by comparing time and number of tests. For example: 12 tests are calculated to be performed in 5 minutes based on the principle that 70 tests are performed in 30 minutes.

Chart 1.

Gender ratio

■ Men ■ Women
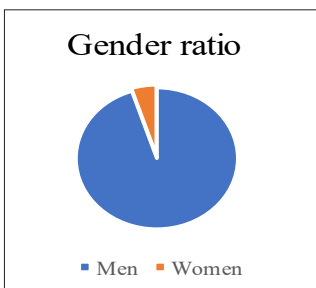
Chart 1. 95% of the students in the study were male and 5% were female.

Table 2

	Design technology	Car model	Boat model	Airplane model
2016	5	7	6	8
2017	7	8	8	6
2018	7	9	7	8
2019	9	10	10	9

The table shows the average score of Bennett's test performed by participating students in design technology and car model, Boat model, and airplane model categories.

Chart 2.
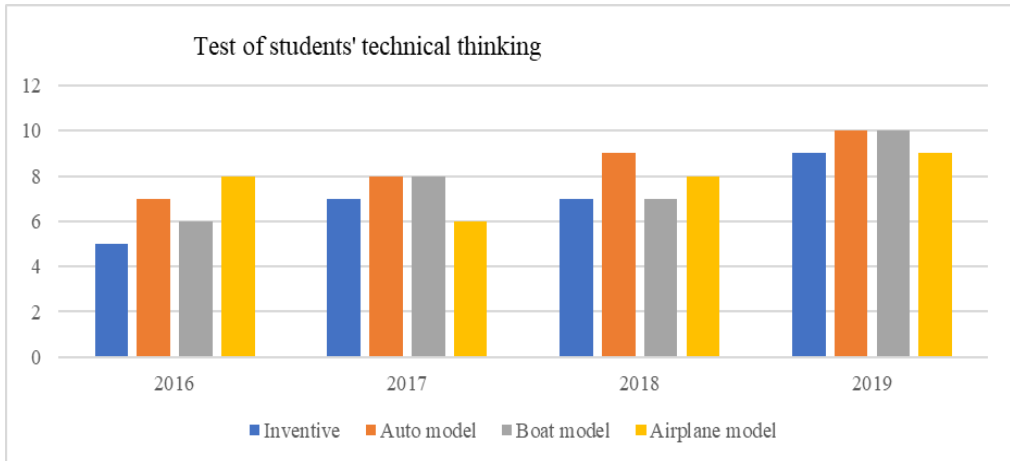
Chart 2. According to the graph above, it can be seen that the test average of students' technical thinking test has improved to 6.5 in 2016, 7.25 in 2017, 7.75 in 2018, and 9.5 in 2019.

Chart 3.
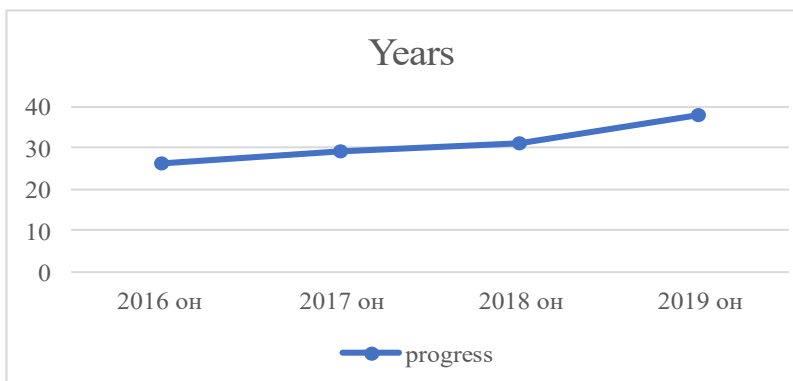
This graph shows the increase in technical reasoning tests of participating students in the 4 categories.

Conclusion

1. In the history of psychological science, research on the development of human thinking, including technical thinking, began to be studied more than a hundred years ago, and many methods were developed.

2. Emphasizing that the basic environment for the development of technical thinking is the general education school, it has been used as a tool to improve the integration between subjects and to implement quality learning activities within the framework of the stability of the curriculum. Here, it is worth emphasizing the important role of "Design Technology Course".

3. Russian scientists use Bennett's test in their research to determine the technical thinking development and thinking level of senior high school students and continue to prove it as a reliable and qualitative assessment method. Therefore, it has been observed that the test material we developed and used has a good effect on stimulating students' technical interest.

4. According to the results of the 4-year examinations and tests of students participating in the design technology and technical sports of the State Technical and Technological Olympiad held in 2016-2019, there are positive results.

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RESEARCH ON "TUGSBAYASGALANT-NOMYN IKH KHUREE" MONASTERY ESTABLISHED BY UNDUR GEGEEN ZANABAZAR

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Abstract

Undur Gegeen Zanabazar was born in 1635, was the son of the Tusheet Khan Gombodorj and in 1639, named him as the first Bogd Jebtsundamba Khutuktu, the spiritual head of Tibetan Buddhism in Mongolia. He started to study Buddhist philosophy from his early ages. And from 1649 to 1654, he studied in Tibet. During this time, he deepened his knowledge about Buddhist core schools and philosophies, also mastered creation of Buddhist arts. In 1654, right after he came back from his study in Tibet, he started to build "Great Monastery of Tugsbayasgalant" which was the Centre of Tibetan Buddhism of Khalkha Mongols. He spent over 32 years for its accomplishment. Unfortunately, during the war between of Khalkha and Oirat Mongols, this monastery destroyed and burnt down by Dzungar khanate`s army.

Between the 2013-2015, Institute of History, Mongolian Academy of Sciences did archeological excavation and research for remains of the monastery, they found over 1300 historical valuable items. The few important examples of their findings such as first time ever found masterpieces of Five Buddha Families (objects made by ceramic), pieces of big Buddhist sculptures, full set of armor of Mongolian warrior, eight auspicious symbols and Buddha statue made by copper and among other. Undur Gegeen Zanabazar was a multi-talented man, he was a great sculptor, painter, linguist, spiritual political leader of Mongolia and also, he was an astonishing architect and a city planner, too. In fact, the "Great Monastery of Tugsbayasgalant" was the greatest example of masterpiece created by Undur Gegeen Zanabazar which he dedicated 32 years of his life and his intelligence to its creation and accomplishment.

Keywords:

First Bogd, Tsagaan Khot, Khalkh-Oirat war, Ruins of Saridag Temple, excavation, unique findings.

Introduction

Yellow hat sect of Buddhism in Mongolia started to spread around XVI century when Abatai San Khan set the cornerstone of Erdenezuu Monastery in 1586. Since that time, the Yellow hat sect spread widely over 350 years, "As of 1937, there were more than 750 complex monasteries, around 4000 temples, sanctuaries and schools with far more than 100 thousand monks" (*History of Mongolia. Vol.IV, UB., 2003, page 211.*). Valuable contributor to this development of Yellow hat sect is Zanabazar *(1635-1723)* a son of Khalkha Tusheet Khan Gombodorj. He was born at family of Tusheet Khan Gombodorj, the 7th generation of Batmunkh Dayan Khaan of the Great Chinggis Khaan's Golden Family, at a place named "Div" (current Yesunzuil soum of

Uvurkhangai province) north of Usan Zuil in the territory of Tusheet Khan aimak on 25ᵗʰ day of blue she pig year of 1935 and he was reincarnated as "First Bogd Jevzundamba Hutugtu, the leader of Yellow Sect Buddhism of Mongolia at age of 5 in 1639" (*Boldbaatar J. Monks of Mongolian Buddhism. UB., 2010, page 32.*).

I have conducted some oral surveys regarding to Tugsbayasgalant Nomlol Buteeliin Khuree (Gandan Choinkhorling) and compiled the survey after through comparison of researches on relevant books, research sources, findings of archaeological excavations and construction of monasteries and temples of Mongolian, Tibetan and Chinese style monasteries.

Main section

His Holiness G.Zanabazar studied in Buddhist teachings, customs, and disciplines from his very early childhood age, and continued his study with Dalai Lama Agvaanluvsanjamts in Tibetan in White Tiger year of 1649, when he completed Five Minor sciences of Buddhism at higher theoretical level especially Buddhist arts" (*Damdinsuren D. Famous craftsmen of Ikh Khuree. UB., 1995, page 5.*) then returned to Mongolia in 1654. Having returned his motherland, the young saintly monk started to build many religious centers, monasteries and learning places for monks in order to propagate Buddhism among local people. G.Zanabazar was not only the leader of Mongolian Yellow Sect Buddhism, but also great enlightener, educator, who has versatile talents of sculptor, artist, linguist, religious and state figure according to historical sources and works. His school of fine arts in Mongolia with its peculiarities and his unique masterpieces nowadays become "A part of world cultural heritages and listed officially in extraordinary memorial forms in Mongolian history" (*Oyunbileg Z. Architecture of Amarbayasgalant monastery. UB., 2010, page 22.*).

According to academician, the His Holiness Zanabazar was an "Architect" *(Rinchen B. Journey to the West. UB., 1956, page 89.)*, who initiated campaign to mass construction of Buddhist temples and monasteries nationwide for the purpose of propagating Buddhist culture and teaching to people, encourage religious art and learning. He was not only designing Buddha figures himself but also engaged in construction of monasteries according to his design styles. For instance, Zanabazar instructed Tsogchen temple shall be applied with certain design with 108 pillars. If number of monks increase, then it can be further extended by adding a new beam without affecting its standard form" (*Ouynbileg Z. Architecture of Amarbayasgalant monastery. UB., 2010, page 23.*). With his direct involvement, major monasteries built such as Shankhyn Baruun Monastery (Ribugejagandantegchenling) in 1648, Dubkhan or Creation temple in 1651, Tugsbayasgalant Nomlol Buteeliin Khuree (Ribogejagandan Shaduvling) in 1654 and Battsagaan Tsogchen temple in 1706.

History and historical sources of establishment of Nomyn Ikh Khuree

The First Khalkh Zaya Pandita, Luvsanperenlei included biography of his beloved guru His Holiness Zanabazar in his book "Bright Mirror" written in Tibetan in 1698-1702. "General biography of Bogd Jevzundamba" section in the book becomes the primary source related to history of Saridag Monastery. The source tells "When requesting to Panchen Bogd regarding to study at WuiZang, he got advice of – it will be more beneficial to religion and all beings if you start to build monasteries in Mongolia

rather than studying here. Accordingly, Ribogejaling monastery was newly built at a place named Khentei Khan in Jamba wooden horse year (1654) (*Bira Sh. Zayapantida Luvsanperenlei –biography of Undur Gegeen. UB., 1995, page 6.*). Moreover, eminent tangka painter of Ikh Khuree D.Damdinsuren said "His Holiness Zanabazar built Tugsbayasgalant Nomlol Buteeliin Khuree (Ribogejagandan Shaduvling) at downhill of Khentii Mountain when he was 20 years old. Moreover, he started monastery project using special construction methods called Undur Gegeen's builder in blue horse year of 1654" (*Damdinsuren D. Famous craftsmen of Ikh Khuree. UB., 1995, page 5.*).These wood carpenters and builders used to settle as "Builders' clan" survived until revolution of 1921. This clarifies the His Holiness Zanabazar set corner stone of Ribugejagandantegchenling monastery under the hills of Khentii Mountain in 1654 soon after arrival from Tibet.

As an alternative source, "Names of the First Bogd Jevzundamba" written later mentions "The Tugsbayasgalant Nomlol Buteeliin Khuree (Ribogejagandan Shaduvling) was built under hills of Khentii Mountain in the territory of Khalkha by Bogd Jevzundamba (1654) for the purpose of spreading Buddhism in Mongolia in blue horse year of 11th year of Eyer Zasagch" (*Biography of Bogd Jevzundamba. Mongolian National Library, Treasury of manuscript. page 9.*).

As mentioned above, "Khalkha nobles from 7 khoshuus assembled in "Shireet Tsagaannuur" site recognizing G.Zanabazar as Undur Gegeen or His Holiness Zanabazar and established Shar busiin Urguu" (*Biography of Bogd Jevzundamba. Mongolian National Library, Treasury of manuscript. page 6.*).According to historical sources above, the Undur Gegeen's Shar busiin Urguu expanded to as Nomyn Ikh Khuree, which changed its location around Saridag Mountains of Khentii Mountain range over 30 times to become root of Ikh Khuree, Bogdyn Khuree, Niislel Khuree and currently Ulaanbaatar city.

The reason for building a Nomyn Ikh Khuree

His holiness G.Zanabazar moving his Nomyn Ikh Khuree, which he established, from the valley of Orkhon river to the south of Khentii mountain has several reasons. First is that he may have explored the area in the Khan Khentii mountain range, the birthplace of Great Chinggis Khan, east from Erdenezuu Monastery founded by his great grandfather Avtai Sain Khan and chose a place that has perfect natural scenery for Nomyn khuree. Moreover, while he was studying in Tibet, Panching Bogd holiness has communicated to him "It is more helpful for religion and people if you return to Mongolia and establish a domain of monks." (*Bira Sh. Zayapantida Luvsanperenlei 1995,–biography of Undur Gegeen. UB., page 6.*)

And the area on which Khuree was established is remote from settlements and is a virgin and an isolated place away from any outside influences, which it seems, according to him, is suitable for concentrating in tranquility for mediating, reciting preaching, and creating religious works and crafts. Later, after the Khuree has been destroyed, G.Zanabazar has been meditating and creating works for many years in Dubkhan monastery. The undertaking to establish Nomyn Ikh Khuree has launched due to these reasons, and a group of temples remaining on the foundations of old Khureehas been namedBaruunkhuree, which later became Shankhyn Monastery.

Nomenclature

In clarification the nomenclature of this monastery, His holiness G.Zanabazar has proclaimed the monastery he founded "Ribogejai-Gandanshaduvlin" in Tibet or Tugs-bayasgalant Nomlol Buteeliin Sum of Delger Ulziit mountain" in Mongolian, which was the official name. However, they came to be called "Tsagaan khot" (White city) to the people due to the exterior colors of the majority of the temples in the monastery. Today, it is named "Saridagiin monastery" as a result of the location of the monastery, which is south of "Artsat Saridag" mountain, a branch of Khentii mountain range.

The place where Khuree is established

His holiness G.Zanabazar has founded "Tugsbayasgalant Nomlol Buteeliin khuree," a Yellow hat sect center of Khalkh, or the Saridag monastery in 1654 on the place where he physically arrived and gave his blessing, which was a city, founded facing the direction of sunrise in the south of ArtsatSaridag mountain, a branch of Khan Khentii mountain range, in the territory of today's Erdene soum, Tuv central. In terms of geographical location and structure, the ruins of the monetary is situated in a place that has perfect natural scenery overseeing the distance in a region of forests and taiga of high mountains at 2665 meters above sea level. Pines, birches, willows, and dark woods grow densely surrounding the area and over 100 meters west from the ruins, there is a small fresh water lake named "Monastery lake", which is the source of "Monastery river," a tributary of "Tuul river." This place which is over 150 km north west from Ulaanbaatar and over 90 km directly north from Erdene soum, has many obstacles and hurdles such as swamps and marshes, which makes it impossible to drive there, and which only allows access on horseback or on foot.

Time period of establishment

Time period of the establishment of this monastery has also been left in historical sources. For example, the "Trivial brief biography of Bogd Jebzundamba" of Zayapan-tida Luvsanperenlei states specifically that "I have came to Mongolia in the last winter month of the earth sheep year called Donduv (1679). I have came to pay homage to this Bogd gegeen in the summer of iron monkey year called Dagbo (1680). This was a time when the construction of the majority of the exteriors of the monasteries was completed and the stupors were being crafted. I have stayed there for ten days and recited commandments and empowerments. Some ravnai were carried out by lamas in congruence with the creation of the stupors of Ribogejalin monastery in the summer of fire tiger year called Sadba (1686)" (*Bira Sh. Zayapantida Luvsanperenlei –biography of Undur Gegeen. UB., 1995, page 17.*). This shows clearly that the construction of Sa-ridag monastery has commenced in the year of Wooden horse or in 1654 and complet-ed in the summer of Iron monkey year or 1686, and the creation of the stupors finished in the fire tiger year or in 1686, which is 32 years of work. This demonstrates that the full construction and completion of a major monasteries required significant capital, resources, manpower, and time in that time. There are also evidences that certain major monasteries required a period of even 100-200 years.

War of Khalkh and Oirats

But this monastery which was constructed for a total of 32 years between 1654 and 1686 was set fire and destroyed by the soldiers of Dzungar during the war of Khalkh and Oirats. Since then, Ikh khuree has been organized and constructed in man-

ner suitable for a mobilization rather than being settled in one place for a long time. In 1688, while Chakhundorj, the Tusheet khan of Khalkhas, has been mobilizing to destroy and eradicate the castles and barricades of the Russians who were encroaching the area around Lake Baikal, and was been attacking the castle of Nerchus west of Lake Baikal, Zasagt khan Shar has contrived with Galdan Boshigt khan of Dzungar to join forces and attack Tusheet khan from the back. Chakhundorj who found out about the contrivance in advance, mobilized a ten thousand soldiers and attacked the territory of Zasagt Khan. In this battle, Zasagt khan Shar and Dorjjav, the brother of his son-in-law Galdan boshigt were killed. After this event, though Tusheet khan Chakhundorj has made a proposal to assemble a meeting with Galdan khan of Zuungar, Galdan rejected the proposal and entered the territory of khalkhas with a thirty thousand soldiers, which started the war of Khalkh and Oirats, which continued for eight years. The soldiers of Dzungar has annihilated the ten thousand soldiers led by Galdandorj, the son of Tusheet khan, at a place called Tumurt, and the forces which were attacking the barricades of Nerchus of Setsen khan Sholoi at Onon river. Subsequently, they fought and destroyed the main force of Tusheet khan Chakhundorj at a place called Olgoi lake in the first autumn month of 1688, which effectively annihilated and destroyed the resistance the Khalkhas resistance.

Consequently, Tusheet khan Chakhundorj, along with his younger brother His holiness Zanabazar, escaped with around 20 thousand subjects and submitted to the Manchus. There are records which states that Galdan boshigt, who fully conquered the Khalkha territory, terrorized the people, set and fire and destroyed the monasteries and murdered the lamas. One clear example of this is that "In 1688, the abovementioned Tsagaan khot or Nomyn Ikh khuree founded by His Holiness Zanabazar was destroyed by the soldiers of Galdan boshigt during the war of Khalkhas and Oirats."[2] Furthermore, it states that "Galdan's killings were unspeakable and while terrorizing the whole khalkhas during the chase after Zanabazar, he set fire to monasteries, and annihilated monks, lamas, and the commoners. As a result, countless Mongolians escaped to Inner Mongolia."[3] According to an old legend, "Oirat soldiers, while chasing Zanabazar, spent many days in the forests searching for the Tsagaan khot in order to destroy it. Then, one morning, the location of Tsagaan khot was identified when the golden pinnacle of the monastery that was glistening and sparkling in the sunlight was noticed by the soldiers, who ferociously attacked and destroyed it." Actually, findings which prove this have been found from the ruins of the monastery. Fragments of gilded pinnacle and decorations of trimmings, an indication of gilding and decorations of the pinnacle, which connected the roof of the monastery, were found.

This monastery was basically left as a ruin since the end of the war of Khalkh and Oirats in 1696 and futile attempts were made to restore this monastery. In a source called "Bolor toil" of Zayapantida Luvsanperenlei, it is stated that "In order to restore Nomyn Khuree that was destroyed by the war between Khalkha and Oirats and to make it the religious center of the Khlakhas, the stupors were refurbished, and the lamas were given pays, rewards, and teas."[4]

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[2]Dendev L. Mongolian History of middle ages. UB., 2008, page 145.
[3]Batbayar B. Migration and exist of Mongolian-I. UB., 2006. Page 183.
[4]Bira Sh. Zayapantida Luvsanperenlei –biography of Undur Gegeen. UB., 1995, page 6.

Archeological study carried out at Nomyn Ikh khuree

This city which was constructed in the 17th century and which constituted the pinnacle of the magnificent creation of His holiness was covered by forests and taigas untouched by anyone for over 230 years until the beginning of the 20th century (*The ruins of the khuree which was constructed at the edge of forest in a high mountain region of Khangai over 200 years ago has turned into a dense forest in the hands of time. O.D*). Then in 1915-1916, it was recorded that a research team of the Russian empire lead by P.A.Vitteg has found the location of Saridag monastery with the assistance of local residents. After that, in 1923, the team of D.Bat-Ochir, a researcher of the Institutes of Sutras and books and V.I. Lisovsky, a Russian scientist, has arrived to research the place and carried out works to determine the general state of the monastery, turning it into scientific activity. Since then, no other research was conducted until 1995, when a field research team was organized by the Institute of History of the Academy of Science in cooperation with the museum to study the local regions of Tuv province, and making archeological layouts and carrying out test excavations at certain places. As a result, the site was proven to be the place of Nomyn Ikh Khuree, which is deemed as major among the monasteries constructed by the initiative and involvement of His Holiness in terms of time and scope. Moreover, it has been determined that the location of the site where the monastery was established had unique characteristics.

Since 2013, researchers from the Institute of History under the Mongolian Academy of Science commenced to advance research for collecting physical evidences and oral sources by renewing survey on ruins of the monastery in the scope of "Cities and settlements of Mongols in XVII Century". Moreover, by the result of rescue excavation conducted jointly with the Institute of History under the Mongolian Academy of Science (MAS) and Ministry of Culture, Sports and Tourism of Mongolia and Bogd Khaan Winter Palace museum in 2013-2015, there were over 1300 findings discovered at the ruin. For example: many interesting findings such as Five Dhyani Buddhas *(made of clay)* found with very elegant masterpiece design never been discovered before, giant size clay cast Buddha figures, half impression figures, elegant design decorations for construction, film shield, helmets, swords, white Chinese cups, gold, silver, and gem stuffs for altar, flint gun"[5]. There were such massive valuable findings discovered as in design of Zanabazar school design before and now much to do for researchers and scholars to make profound survey on the findings.

Structure and organization of Nomyn Ikh Khuree

Tugsbayasgalant monastery or Tsagaan Khot was surrounded with 11 large cathedrals, temples, stupas and stone walls and, it has been determined that there are remains of 3 stupas, residue of stone walls and streets and pathways made from stones. As of today, the remains of Tsogchin temple, which is considered to the biggest of aforementioned 9 buildings, has been researched and its excavation work has been conducted. The place, on which the monastery was existing, was steep and therefore specially shaped stone terraces and boards were prepared in advance. On this flat board, the foundation was laid with granite and the building of temple and religious school were built on it. In order to enter the temple located on such high terraces, each stone stoop had the stairs on both side through which people could go up.

[5]Eregzen G. Discover of Nomyn Ikh Khuree: Research on Saridag Temple, Institute of History and Archaeology, Academy of Science, UB, 2015, page 1.

The stone wall of this Khuree is similar to the stupa wall of Erdenezuu monastery with its size, design and structure and the stone wall remains prove that this monastery was built by the way of ramming down the soil to build dams, flattening natural rocks and stones, arranging flattened rocks in a row on 2 sides, erecting principal wall with a height of 2m and width of 1.5 m (*some walls had the height of 3-4 m at some steep ground*) and daubing temple with mud and finally painting with white paint. The stone wall had the roof with tall stoop in its middle and people were able to enter through huge gate and the findings including thick wooden door and door hinge have been found in this area. When entered through fortified yard, there was over $100m^2$ field embedded with fixed flat stones. Perhaps, the main religious rituals such as 'tsam' religious mask dance, sor offering and debate in knowledge were held in this area.

Behind this area the remains of Tsogchen temple which was surrounded with fortified yard was discovered and the excavation was started. According to the observation made on ruin, remains and building material of the temple, Tsogchen temple was built by Tibetan design and was approximately over 10m tall, had stone walls, 8 rooms, 2-storey, ceramic roof. Because other temples, which were built at the that time, such as "Shankh", "Khugnu Tarni" monasteries were built with same materials and same design, Tsogchen temple design must have built by Tibetan design. The evidence was found that there was a vent hole on the stone wall remains of the temple. The height of wall above this vent hole is over 2 m and it shows that the building was 2-storey. The proof was found that the roof of the 1st floor was orange while 2nd floor roof was golden. The roofing tile of the 1st floor roof was consisted of tray and front tile. These tile were decorated by Soyombo script invented by High Saint Zanabazar and wheel-like pattern and they were used for the wind-porch in front of temple and roof. The front roofing tile of golden roof of 2nd floor was decorated by pattern which depicted bull face. The internal and external walls were painted with white paint. Tsogchen temple had 10 pillars with granite foundation, wooden and stone floor and downspout.

Unique valuable findings

In accordance with "Discover of Nomyn Ikh Khuree: research on Saridag monastery"published by the Institute of History under Mongolian Academy of Science, the evidences were found that there were 4 m tall 2 god statues in sitting pose made from mud in the western and north eastern corner of the temple and 5 big god sculptures in sitting pose made from mud along with right and left walls of the temple. A four-legged fireplace, bronze pot on the fireplace, porcelain vessel and massive silver bowl, prayer beads made of colorful gem stones, silver coin, gold leaf in the pot, plants like rise and remains of the fruit with big bone seed have been found in the charm or relic installed in a stupa. A thin silver sheet which depicted male and female "Zambala" god which was torn away into many parts but available to stretch was found on the pot. The steel anvil buried under this fireplace was found. The "complete set and instruments of ancient hero of 13th century of Mongolia including plated armor, iron helmet with plated throat-band, sworn, arrowhead, spear barbs, flint pistol"[6] was found behind the fireplace during excavation. 1 meter diameter base of god statue was found during

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6   Eregzen G. Discover of Nomyn Ikh Khuree: Research on Saridag Temple, Institute of History and Archaeology, Academy of Science, Ulaanbaatar, 2015, page 1.

excavation and the unique findings such as *eight* auspicious symbols made from mud, four pair fishes, vessel, lotus and golden wheel with eight spokes had been found.

At the 3m deep excavation, a number of god statues made from mud with a posture of cross-legged sitting on the lotus, with 15 cm height of each statue, had been found. These statues were identified as Five Buddha Families created by the instruction of High Saint Zanabazar. The arms and heads of these five statues, which had been found broken and collapsed during excavation, were fallen apart from their bodies and currently around 1300 statues were found. These god statues depict the god seated in cross-legged pose on the base with pattern of lotus and doing meditation. The gods' statues were created looking down and each statue gives an extraordinary impression like a expression of human emotion. The arm exposure of the gods statues are various and each statue looks elegant, crafty and masterly created.

Above statues of Five Buddha Families had been created for the purpose of decoration and ornament of the temple at that time and perhaps it was planned to cover them with gold or brass. The glided god statues created by High Saint Zanabazar like these statues are kept in the Finer Art Museum. Over 20 statues of god made from mud including "Yamantag", "Green Tara" and "Ayush" were found during excavation. The external frame of these half moulded god statues has 2 kinds of shapes. Some statues have round frame in which the god portraits are created in the form of semi-embossed shape. Other statues have Chandmani /Buddhist three Jewels/ triangle frame in which the bodies of goods are completely embossed. Along with internal edge of the frame, Tibetan spelling scripts are written in the embossed form.

Also through this excavation, many other findings of the time such as broken vases of the roof, edging trims, small pieces of gold plated roof decorations and multipurpose metal nails (encircling wooden pillar or cross beam of a building etc.) thin sheet of metal that was nailed on the threshold, spike, lock, cord and metal designs used for decoration purpose were found in large amounts. Based on these facts, it is proven that in XVII century, Mongolians ourselves used to make the building materials required for the constructions including the spike, lock, cord, bricks for the wall and vase for the roof etc. Findings found in the excavations obviously demonstrate that "Tugsbayasgalant" Nomyn Ikh Khuree or Tsagaan khot (White City) established by Undur Gegeen Zanabazar (High enlightened One) was undergone a sudden collapse and destroyed due to chaotic rebellion and burning out. The state of stone wall, roof of the church, burnt wooden pillar and remaining of the floor tiles are evidence of the temple was broken down in the fire. Also based on the excavations` state it is shown that all of the sacred offerings and decoration items that were in the temple had been hit and broken due to a sudden shake. One of the presumptions that I prefer to highlight during these studies is, after finishing building of the Yellow hat sect temples they are depicted in large size paintings alongside their surrounding natural beauty. For instance, paintings such as "Boghdo khan`s winter palace" by B.Sharav, "Zayiin khuree" by G.Damba, "Baldanbereeven khiid /monastery/" and "Ikh khuree" by unknown artist are being kept in our museum. Also creature that is kept in the Fine Arts museum under name "Architecture of ancient Mongolia" might be an art illustration of the "Tugsbaysgalant" Nomyn Ikh Khuree. The reason of making such conclusion is, design and general state of the temples and churches depicted on this painting looks

like similar of the Nomyn Ikh Khuree.

Conclusion

It is considered that remains of this "Tugsbayasgalant" Nomyn Ikh Khuree – White city are a valuable monument of history and culture that represents certain historical period of Mongolian fine art development. Currently, excavations have been made only in the Tsogchen dugan (Main temple) and the archeological findings are proven to be precious creatures of Undur gegeen (High enlightened One) Zanabazar made by his pattern with unique and unrepeatable design. Therefore, it is crucial to take measures including full excavation in the whole remains of this city, register the findings, restoration by professional institutions and pass the heritage to our next generation.

Zanabazar was not only a great personality who has versatile talents of sculptor, artist, linguist, religious and political leader but also was a skillful architect, builder and a "city creator"[7]. It is becoming clear that he has commenced the actions of spreading Buddhist religion ideology to the nation and constructing temples and monasteries throughout the country for a purpose of developing religious art and creations. "Tugsbayasgalant" Nomyn Ikh Khuree is one of the examples of his greatest creatures that he constructed during his peak creation time aged between 20-50 years old bringing his skills and wisdom together creating the church and its idols by own hands.

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Ruins site of "Tugsbayasgalant – Nomyn Ikh Khuree" monastery, 2015, Photog
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Framework stone walls, History and Archaeology Institute of The Academy of
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Specimens of ruins, found in archaeological excavations "Tsogchen" monastery. Photography of website "Daily newspaper" http://dnn.mn, CC.

Construction materials found in archaeological excavations. Photography of website "Daily newspaper" http://dnn.mn, CC.

The excavation of a large number of clay icons found. History and Archaeology Institute of The Academy of Science. Exhibition catalog's photography, 2015, CC.

"Ancient Mongolian architecture" painting, Fine art Museum of Zanabazar. XIX century.

"The five elements goddess" found in the "Tsogchen" temple ruins. History and Archaeology Institute of The Academy of Science. Exhibition catalog's photography, 2015, CC.

Roof ceramic ornaments. History and Archaeology Institute of The Academy of Science. Exhibition catalog's photography, 2015, CC.

The picture general plan of "Tugsbayasgalant" monastery based on the ruins of monastery. Painted by B.Battsooj. History and Archaeology Institute of The Academy of Science. Exhibition catalog's photography, 2015, CC.

Icons of clay "Ayush" found in the "Tsogchen" temple ruins. History and Archaeology Institute of The Academy of Science. Exhibition catalog's photography, 2015, CC.

The plate armor, helmet, sword, spear and arrowheads found in the "Tsogchen" temple ruins. History and Archaeology Institute of The Academy of Science. Exhibition catalog's photography, 2015, CC.

Eight offering superb clay ornaments. History and Archaeology Institute of The Academy of Science. Exhibition catalog's photography, 2015, CC.

Zambala god crafted on silver plate, History and Archaeology Institute of The Academy of Science. Exhibition catalog's photography, 2015, CC.

Appendix

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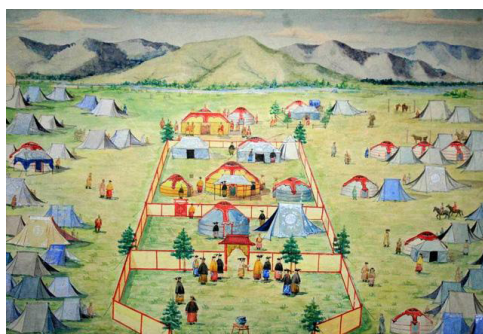
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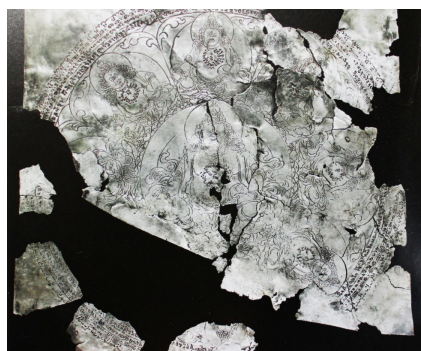
16

"MANKHAN" IS A MONGOLIAN AND CHINESE FOLK SONG BECOMING A NEW EVOLVED SPECIES

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Abstract

In this report, we discussed how the Mongolian folk song has evolved under the influence of Chinese regional culture and created a new type of art called «Mankhan diao». There are two explanations for the dune dialect. The first one is: a new type of music / or «Mankhan diao» dialect, born from the fusion of Mongolian-Chinese folk songs. The second one: 漫瀚调 /Mankhan diao is a new genre of independent music called «Mankhan diao". This melody called Mankhan is a new type of music that has evolved and changed due to the fusion of Mongolian and Chinese language, culture and customs, losing its identity and uniqueness. According to historical facts: In the late 19th century, Mongolian and Chinese people lived together in the same area in the Chinese region, engaged in agriculture and animal husbandry, and influenced each other in terms of language and customs, resulting in the evolution of music as a cultural phenomenon. Especially: Mongols of Ordos are close to Inner Mongolia and 山西（Shan xi）陕西（Shaan xi）In Shaanxi Province, Mongolian and Chinese people live together, and their culture and art have been mutually assimilated and influenced by each other. From this period, a new type of folk song emerged based on the melody of short Mongolian folk songs in Ordos. Researchers believe that the availability of Mongolian folk music in the society has created a new "Mankhan diao" and continuously enriches it.

Keywords:

Mongolian, Chinese, Folk song, Influence, Evolution

Introduction

- "In general, a song is a resounding echo of vowels manifested by the combination of three: melody, poem, and thought. Folk songs are "living treasures" that are passed down from generation to generation, from mouth to mouth, from person to person. In general, folk songs are the fertile ground of the singing art that has developed in the culture, language, land, oral dialect, customs, way of thinking, intellect, natural and human culture of the people. (Erdenechimeg, 2020, 54).
- Therefore, the folk song of the Mongolian nation is a type of Mongolian singing art that has developed on the soil of the steppe herding and nomadic culture of Mongolians. But Chinese folk song is a type of singing art with its own characteristics, which has developed mostly within the framework of farming culture based on the soil of the settled culture of the Chinese people.
- An ethnic folk song is: a branch of the folk song of that nation. Therefore, ethnic

groups differ from each other in terms of folk language, local dialect, customs, wedding rituals, religion, terrain, and natural features. In particular, the style of singing folk songs, inflections, and thinking have their own uniqueness and identity, so the style of singing always retains its own characteristics.

- However, since the middle of the 20th century, the nomadic and agricultural settlement cultures of the plains have influenced each other, and the people of the area have evolved in their folk language and traditional oral music, lost their identity, and created new species. This gave birth to a unique scene.
- One example of this is the fusion of Mongolian-Chinese culture, which has created a genre of music called "Monkhan" or "Mankhan".

Survey Methodology

Research objectives:It is to highlight the new genre of "Mankhan" dialect, which has evolved from the fusion of folk songs in the nomadic culture of Mongolia and folk songs in the framework of Chinese settled culture.

Research purpose:
- Design questionnaires and collect data according to the objectives.
- Analyze music research data,
- Summarize the results and make a conclusion,

Methodology:

Regional folk music from the point of view of ethnomusicological methods, to determine regional folk song typology, to analyze and clarify a new type of melodic music that has evolved from the fusion of different languages and cultures. Also, the research was conducted and analyzed using quantitative methods.

MAIN SECTION

1. Historical origin of Mankhan diao漫瀚调（Mankhan diao） folk song

At the end of the Qing Dynasty, the Qing government insisted on opening up the wasteland in Mongolia. In the 28th year of Guangsug Province, the Qing government established the Bureau of Reclamation to open up the wasteland of Inner Mongolia.In this way, Chinese farming and private land reclamation were transferred to the government and more legalized."Junger Cape is adjacent to 山西（shan xi）Shaanxi and 陕西（shan xi）Shaanxi.So the Han nationality came and settled in large numbers. Except for a few people engaged in handicrafts and small trades, they worked in agriculture, which made this area, where the people of Mongolia were engaged in animal husbandry, a place where the citizens of Mongolia and Han nationality live together in agriculture and animal husbandry.(Zhang Huang. 2012. 262-269)It is a fusion of two different cultures. The emergence of this situation not only influenced the establishment of close relations between Mongolians and Han nationality in the economic field, but also created the opportunity to infect and integrate each other in cultural life. The Mongolian and Han nationality people living in Junger work side by side, communicate closely, sing together, learn from each other, and the folk music culture naturally connects and merges with each other.As a result: "A unique form of local folk song

of Junger Cape was created, based on the Mongolian short dialect folk song of Ordos, incorporating some of the singing techniques of Shaanxi and Shaanxi folk songs, and the Manкhan diao was developed (Liu Haiping. 2015, 69-73).It is said that the name Manкhan diao is a transliteration of the Mongolian word "manhan" (Feng Guanyu, 2003, 74-77).

2. Characteristics of Manкhan diao folk music

The main characteristics of Manкhan diao music are: The structure is neat, the melody is bright and simple. With it, it is easy for people to learn, and it is close to people because it was born from the people's life.The Mankhan diao itself contains characteristics of Mongolian and Chinese folk songs and is based on it. The Manкhan diao itself contains the characteristics of Mongolian and Chinese folk songs and is based on the short dialectal song of Ordos. "As for oral art: a new form of music with a unique tone has emerged as a result of cultural exchange that conveys the culture and national history of the Mongolian nation and reveals the Mongolian national identity" (Li Shuron, Li Jin, Lu Siju. 2015).

2.1.   The mode of the Mankhan diao

Considering the tone and tone of the Manкhan diao:It consists of pentatonic tones, which have preserved the characteristics of Mongolian folk songs, and the changing vowels are used for the decoration of passing sounds and are rarely used. Chinese folk songs along with Dzunger Khoshuu all use pentatonic tones, and the form of northern folk songs is Manкhan diao. laid the foundation.Manкhan diao is dominated by C 羽 (yu) Yu tone, followed by C tone or 宫 (gong) Gong tone,G徵（zhi） zhi mode, D商（shang）Shang mode refers to the four basic modes, and the keynote is C.This can be observed from the beginning of Manкhan diao 漫瀚调（Mankhan diao）.The accompanying musical instruments are mainly Mongolian four-stringed fiddle, Chinese flute, and 扬琴（yang qin） dulcimer" (Liu Mengyu, 2018).At that time, the technology of making musical instruments was not as advanced as it is now, and the range of accompanying instruments was limited, so people summarized these four modes in their long-term artistic practice.

Picture 1. Manкhan diao music group

2.2 The structure of the musical form of Manкhan diao

The structure of the musical form of Manкhan diao is single and short sentences. Each sentence has a structure of two half-sentences, which is a common structure found in other folk songs. The upper and lower parts have a single sentence structure, and some have a four-sentence structure."Sometimes the extended form of the melody sentence has three or five sentences, and in terms of musical form, it has the structure of a stanza form of a folk song" (Tian Yuemin. 2004. 17-19).

Picture 2. Note example №1.二少爷招兵Ee Shao Ye Zhao Bing

二 少 爷 招 兵

The song consists of two parts, each of four measures is a section or half sentence, all 8 measures together form one sentence structure. It is a typical one-sentence structure. One of the features of the melody in this section is the characteristic jumps and syncopated rhythms found in Ordos folk songs.

2.3 The melody of Манҡhan diao

Regarding the rhythm, the Манҡhan diao has many similarities in the rhythm and form of the Ordos folk song. Among them, 2/4 rhythm is the most common, and in terms of rhythm type, it consists of four types: quarter, eighth, syncopation or broken beat. The use of syncopation and broken rhythm is one of the most important features of Ordos folk song" (Yang Yang, Zhuang Binghua, 2021, 120-122).

Picture 3. Note example №2 广令召Guan Ling Zhao

广令召

2.4. Features of Манҡhan diao and folk song

Манҡhan diao is the most prominent feature of Mongolian folk song melody, which is the constant use of long-distance intervals for melodic jumps. This feature is directly related to the natural features of the area.Another reason is: Northern China 陕北（shan bei）north of Shaanxi North, 信天游Xintianyou, 山西Shaanxi 山曲Shanqu are influenced by the song characteristics.There are many forms of melodic leaps in those songs. There are also long jumps with distances of , 10, 11, and even 12.The one-eighth jump makes people feel relaxed, stretched, and jumpy" (Ren Zhongwen, 2007, 58-59).

Picture 4. Note example №3 章盖与阿拉巴特Zhang Gai Yu A La Ba Te

章盖与阿拉巴特

中速

那个 章 盖 骑的马 子， 是 匹 青 马 走的又 快。

我们 阿拉巴特 骑的马 子， 是 匹 拐 马 鼻梁又 白。

3. Combination of Mongolian and Han nationality music in Manкhan diao

The Mankhan diao, influenced by the mutual influence of Mongolian-Han nationality folk songs, can be defined by the following points.

First: Manкhan diao, formed on the basis of Mongolian folk songs, consists mostly of Mongolian folk songs. 80% of the more than 40 Mankhan diao spread in Ordos are derived from the traditional "short songs" of the Ordos people" (Liang Huiju., 2020.62-63).As a result, the Mankhan diao is closer to the characteristics of traditional Ordos folk song singing style and the development of the dialect. For example, the song "Altan Dari" 阿拉坺岱日A La Tan Dai Ri, which is a popular Manкhan diao in Jungar, was developed on the basis of traditional Ordos folk song.

Picture 4. Note example №4.鄂托克旗的西边E Tuo Ke De Xi Bian

鄂托克旗的西边

中速稍慢

鄂托 克 旗的 西 边 有 些 远 啊，啊哈 嗨咿，

跟巴 图巴 雅尔 见 一 面 呀 有 些 难哪！ 啊 哈 嗨咿。

Picture 5. Note example №5.阿拉坺岱日A La Tan Dai Ri

阿拉坦岱日

这 一 道 转回 来 托 嗒 嗬，

望 一 望 我 那 阿拉坦 岱 日 背 影 好。

Second:Manкhan diao, which are based on Chinese folk song lyrics, have the same structure as Shanxi and Shaanxi folk songs and short Ordos folk songs, and most of them have two or four sentences.That is why Shanxi folk songs were better spread in Inner Mongolia, and the melody became richer and the rhythm became more sophisticated, which created the main conditions for the formation of Mankhan diao.

(Bai Yu, 2022. 81-82).This type of Manкhan diao combines the Mongolian pentatonic 羽（yu）Yu mode with the primitive Chinese pentatonic 徵（zhi）Zhi mode and 商（shang）Shang mode. The syncopated rhythm of Mongolian music is absorbed rhythmically.

Thirdly: 风搅雪（feng jiao xue）"Wind and Snow" in Manкhan diaoDue to the long-term integration of the cultures of Mongolia and China, a very interesting phenomenon appeared in the words of the Mankhan diao. There are new words mixed with Mongolian and Chinese" (Bai Yu. 2022. 81-83).This special phenomenon can be seen in a song called 风搅雪（feng jiao xue）"Wind and Snow".《将就两天吧（jiang jiu liang tian ba）"Be patient for two days" is a very classic example.

Picture 6. Note example №6.将就两天吧（jiang jiu liang tian ba）

Be patient for two days.Lyrics:
忽尼马汗布但古利儿 妹妹不会做
hu ni ma han bu dan gu li er
mei mei bu hui zuo
还是玛奈黄米干饭将就两天吧，
hai shi ma nai huang mi gan fan jiang jiu liang tian ba ，
合勒黑勒毛利白呀妹子不会骑，
he le hei le mao li bai ya mei zi bu hui qi ，
还是玛奈大耳朵毛驴将就两天吧。
hai shi ma nai da er duo mao lü jiang jiu liang tian ba 。
Lyrics translation
Although there is mutton and rice flour
My sister can't cook.
Let's eat millet for two days,
Even though there is a horse with a velvet black mane
My sister can't ride, Let's ride the big-eared donkey for two days.
Among these verses:忽尼马汗布但古利儿（hu ni ma han bu dan gu li er）,玛奈（ma nai）,合勒黑勒毛（he le ha he mao）have been transliterated from Mongolian to Chinese.The use of Mongolian language in this song is not very complicated, few words are used in Mongolian language and it is repeated again and again.
Main Section 2. Research
Experimental research methodology

The object of this research is the 7th grade students of Jinshan School, Tumote East County, 土默特左旗金山学校（tu mo ta zuo qi jin shan xue xiao）focuses mainly on the aesthetic ability of music, aesthetic taste, and expressive ability of students. For this purpose, students will be taught from 11:15 to 12:10 on the 4th day of the week, and experimental research will be carried out for 4 months from March 2022 to July 2022.Before starting the experimental research, a micro-test was conducted with a sheet to check the general theoretical knowledge and general singing skills of the students of the class, and the research work was organized by the poll method. In the course of the experiment, students were evaluated using checklists to evaluate the positive changes, weaknesses, and strengths using SWOT analysis. The general curriculum of lessons organized during the experimental research.

1. Objectives

By studying the theoretical basis of regionalized folk song teaching in high school and how this method of teaching is introduced into teaching activities, to study and clarify the methodology of teaching folk music in elementary school.

2. Purpose

1.2.1. Enhance the ability to perceive, discover, perceive, appreciate and appreciate the beauty of art, nature, life and society.

1.2.2. Enrich imagination, use media, technology, and unique artistic language to express and communicate, use visual thinking to create art works with vivid scenes and healthy meaning, and improve artistic expression skills.

1.2.3. .Develop innovative thinking, actively participate in artistic practice activities such as creation, performance, presentation, and creation, learn to discover and solve problems, and improve the ability to practice creatively.

1.2.4. .To understand the history and cultural traditions of various regions, nations, and ethnicities, to create cultural relations, and to learn to respect, understand, and tolerate a community with a shared future for humanity.

Objectives of the Chinese Music Education Program:

- Through "appreciation", students develop musical hearing and understanding, enrich their musical aesthetic experience, and deepen their musical emotions, such as feeling the emotion and emotion of music, understanding the expression and form of music, feeling and understanding the genre and style of music, etc. to gain experience, improve aesthetic perception and cultural awareness.
- Through "Expression", students acquire the basic knowledge and basic skills required for complex performances of music, musical instruments, and art, express their thoughts and emotions through artistic expression, enrich their experience in musical activities, and improve their artistic expression literacy.
- Through "Creation", students study music and other sounds, use the acquired knowledge, skills and creative thinking comprehensively, conduct impromptu performances and music creation activities, express their personal ideas and creativity, and improve their creative practical knowledge.
- Through "Contact", students connect music with social life, sister arts and other fields, combine relevant cultures in the practice of integrating, evaluat-

ing, performing and creating, understand the humanistic meaning and social function of music, expand cultural vision, and develop cultural understanding literacy.

Teaching method:
- Method of lectures and presentations
- How to present a demo (pictures, music, video)
- Testing Kodal's Music Teaching Methodology.
- Learning environment and equipment: classrooms, blackboards, desks and chairs, piano, musical instruments, television, music.

Course content:
- Throat exercises
- Music education
- singing education
- knowledge of music theory
- Development and origin of Chinese folk song
- Genre classification of folk songs
- Regional classification of folk songs
- Honoring folk songs,

Table 1. Checklist for assessing students' knowledge

An evaluation questionnaire from the students at the end of the experiment
   1. By region, which country's folk song do you like?
   2. How many folk songs can you sing independently after finishing the course?
   3. What is the experience after learning folk songs?
   4. Please evaluate the results of folk song lessons
   5. Will you continue to learn folk songs in the future?

Processing of research results

In the pilot study, control sheets, questionnaires, and SWOT analysis sheets were used, and the results of the study were summarized and presented as follows. A total of 45 students participated in the study. There are 24 girls and 21 boys, of which 53.3 percent are female and 46.7 percent are male students. A checklist from the students before the research experiment.

Table 1. Knowledge assessment checklist

Number	Things to check	Good	Medium	Not enough
1	Theoretical knowledge	9%	9%	82%
2	Throat exercises	22%	20%	58%
3	General singing ability	27%	24%	49%
4	Appreciation of music	7%	15%	78%
5	Musical expressiveness	9%	11%	80%
6	Musical creativity	0	11%	89%
7	Cultural understanding of music	4%	9%	87%

For students who were surveyed in a survey using a checklist to determine the situation
- In terms of theoretical knowledge, 9% are good, 9% are average, and 82% are insufficient.

- 22% good, 20% average, and 58% inadequate in terms of vocal performance.
- In terms of singing ability, 27% are good, 24% are average, and 49% are not good.
- In terms of music appreciation, 7% are good, 15% are fair, and 78% are unsatisfactory.
- In terms of musical language expression, 9% are good, 11% are average, and 80% are unsatisfactory.
- 11% are average and 89% are poor in terms of music production
- In terms of understanding of music culture, 4% are good, 9% are average, and 87% are not good.
- In summary, it can be seen that the music-making ability and musical cultural understanding of the 45 students who participated in the experiment are relatively weak.

Questionnaires taken from students before the experiment

1. Are you familiar with Chinese folk songs?
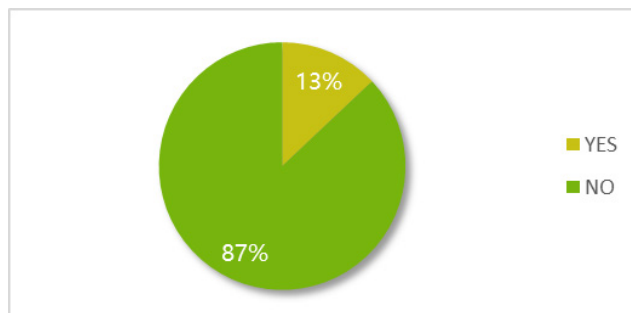
Chart-1. Students' understanding of folk songs

According to the survey, 13% of students know folk songs and 87% do not know folk songs.

2.How many folk songs can you sing by yourself?
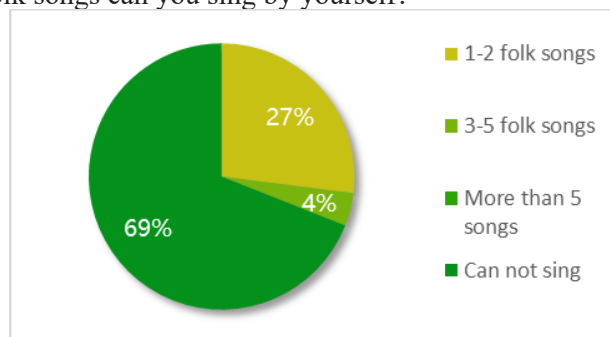
Chart-2. Number of folk songs students can sing 27% of the surveyed students can sing 1-2 folk songs, 4% can sing 3-5 folk songs, and 27% can't sing.

3. Do you know the categories of folk songs?
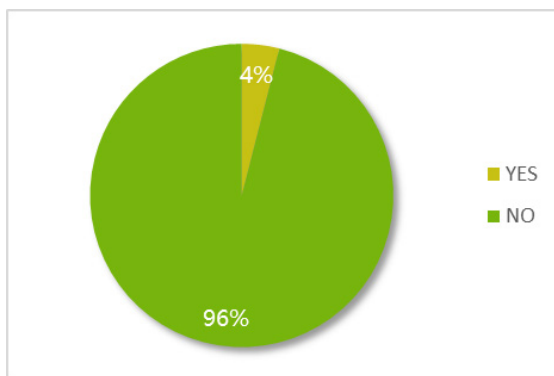
Chart-3. Students' understanding of folk song categories

Only 4% of the surveyed students know the classification of folk songs, and 96% do not know how to classify folk songs.

4.What is the attitude toward folk songs in music textbooks?
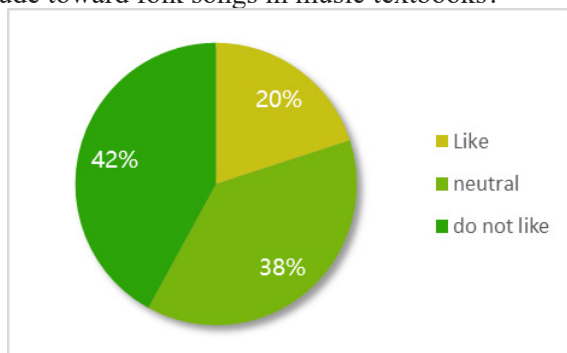
Chart-4. Students' attitudes towards folk songs appearing in music textbooks

20% of the students said they don't like folk songs in music textbooks, 38% don't like them, and 42% don't like them at all.

5.What works do you hope to learn in the folk song class?
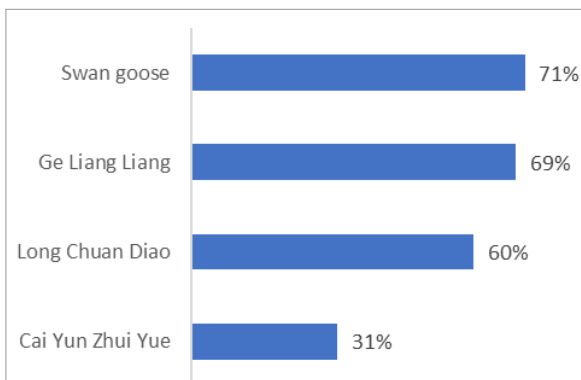
Chart-5. A folk song that students want to learn to sing.

At the end of the pilot study, an evaluation questionnaire was collected from the students

1. By region, which region's folk songs do you like?

Chart-6. Regional class of popular folk songs of students
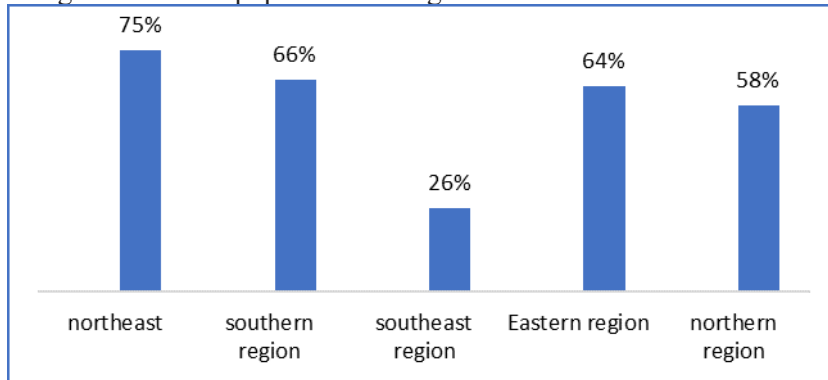
According to the survey, 58 percent of students chose the northern region, 64 percent the eastern region, 26 percent the southeastern region, 66 percent the southern region, and 75 percent the northeastern region.

Conclusion

- The following conclusions are made based on the comparison and analysis of the tone of the Mongolian folk song and the singing style of the Chinese folk song.
- Mongolian musical culture has had a strong influence on the inner structure of the Mankhan diao.
- Mongolian folk music is one of the most important foundations of Mongolian language and culture. The style of Mongolian folk songs, which are sung in tones, halftones, and fulltones, is the basis for the creation of "Mankhan diao".
- "Mankhan diao" incorporates the musical elements of Mongolian folk songs and incorporates the style of Chinese folk songs. Why has the dune dialect been handed down to this day? It is believed to be related to the fact that Mongolian folk music has been sung in Chinese.
- On the other hand, Mongolian folk song lyrics influenced Chinese lyrics and created a mixed poem structure. Therefore, among the Chinese, a new type of music called "Манкhan diao" has its own unique poem. Among them: the mixing of Chinese-Mongolian words and poems created the conditions for the creation of the melody of the song.

EDUCATION OF FINE ARTS FOR YOUNG CHILDREN
SUPPORTING MUSEUM EDUCATION

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Abstract

The goal of modern education is based on the principle that the child who achieves individual development is a teacher-child co-learner and the child is the creator of the action, and the content of education is to find the order of things and make progress in the direction of cognitive development. It is effective to use the museum in training to develop creative thinking, paying attention to learning the ability to talk with others and express oneself, and to learn the new content of the training.

In this study, suggestions and recommendations are put forward to include the educational activities in the museum in the content of the preschool education curriculum.

Key words:

Development training, Museum training, Travel plans and Curriculum

Introduction

Brazilian psychologist Paulo proposed a theory of learning from the perspective of psychology.
Diagram 1.

```
            ( A theory of learning )
           ↙                      ↘
( Login forwarding /disabled )   ( Development training / active )
```
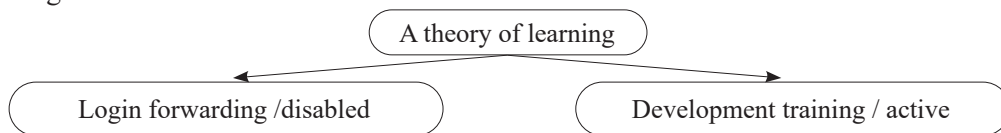
The goal of development training (active) is to create awareness among museum visitors. The goal of education is to make the viewer's opinion active Clarification-Learning, cognitive style, developmental theory. Things to do- Gain rich experience in attracting people.

G. I. Hain Knowledge does not exist apart from the learner, knowledge is created by individuals and society. The museum is divided into 4 categories. In this,

1. Systematic museum, 2. Ordinary museum, 3. Discovery museum, 4. Constructivist museum (G. I. Hain. 1997 Theory of education in museums)
Diagram 2.

```
( what was known before ) →   ← ( What have you learned now? )
```

Museums can be divided into the following types. Among them, Museum of Local Studies, History, Natural, Ethnological Museum, Home Museum, Aquarium, Art, Genius, Scientific, Technical, Revolutionary History, Fine Arts, Space, Military, School, Expression, Children, Music, etc. The museum has 4 main activities.

1. Stores valuables, 2. Values are studied. 3. Prepare to show to the audience /

Write a description and name tag and make the exhibit complex./ 4. Promotion of the exhibition /The museum interpreter will lead./

The content of nomadism, customs, and heritage culture will be reflected in the curriculum, and students of all levels of educational institutions will be taught the knowledge and skills of national heritage, culture, and traditional traditions. (Vision-2050, 1.2.3 of Mongolia's long-term development policy.) Childhood is the foundation of human development. Childhood development, which is a special period of human development, is a multifaceted complex concept that includes physical-health, intellectual-cognitive, social-emotional. An integral part of children's development is the development of the mind, and in the process of doing various activities every day, the child learns to recognize things, scenes, their shapes, colors, and internal characteristics, and this is reflected in their language, thoughts, actions, and drawings.

The act of creating has many positive effects on children, such as regulating the movements of their hands and fingers, finishing the work they have started, gaining endurance, thinking and planning things from many angles, experiencing beauty, and aspiring to create. (Preschool Education Core Curriculum 2019 p33). The following examples show how teachers can teach children social skills through learning and other daily activities in kindergarten.

Feeling and expressing yourself – Expressing your thoughts
- Talk about your impressions (what was beautiful, which hero you liked, etc.) while visiting museums, sightseeing, and traveling.

Expressing your emotions appropriately – Express your feelings of happiness, fun, anger, and sadness with words. For example: It was interesting to visit the museum as a class. Good impression.

Understanding and following the rules – Follow the established rules and regulations in the family, kindergarten, and public places
- Behaving properly in public places such as museums, libraries, attractions, streets, squares, etc.

Diagram 3.Museum Tour Plan

Choose a subject in the curriculum → Get acquainted with the museum exhibits. → Information necessary to visit the museum will be provided. → Key questions will be asked. Attract interest with questions → After the museum tour, we will discuss the exhibits together. → Distribute note-taking sheets. /Drawing/
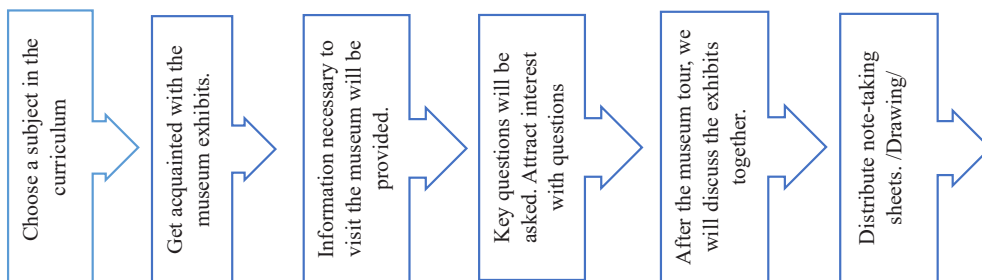
Advice

By influencing people's mind, cognition and aesthetic sense, the museum cultivates knowledgeable and cultured citizens in the society.
Before going on a museum tour:

- Introducing the name and location of the museum
- Go to the museum and give information to the children about what to see.
- Find out what excites and interests the child
- Explain the connection between children's drawings and museum trips
- To educate children about the importance of not touching the exhibits while visiting the museum.

During the museum tour
- Be flexible. Give children the opportunity to freely observe the exhibits they are interested in
- Speak freely about the knowledge gained from the exhibits the child has seen
- Let the children talk as freely as possible about what they see, and let the teacher talk and listen to what they see.
- Show children in pairs or groups
- The teacher observes the child telling his friends and family about what he sees
- When visiting the museum, the teacher and assistant teacher should observe the mood and attitude of the children
- Collect comments from parents about your child's visit to the museum

After the museum tour

Based on the museum experience:
- Have the children who visited the museum draw pictures based on what they saw
- During the museum tour, make them understand how the exhibits relate to what they already know.
- Advise you to visit the museum you visited with your family
- The children talk about their impressions of the museum and the teacher takes notes
- Plan the museum to visit next time /listen to children's suggestions/
- Create a «Museum» collection fund for the class
- Ask family members to write notes about what they said about the impressions they had after visiting the museum
- Take photos and documentations

Conclusion and recommendation

Museum education is a learning activity outside the classroom, where learning is spontaneous and logical. Specifically, it connects what you knew before and what you have learned now. As the training takes place in the museum, the child will be able to see, feel and imagine real things and gain experience. Through the extra-curricular learning in the museum, the children's cognition, emotions, and the world around them are connected and reasoned, and they are interested and actively involved in learning activities. Because the motivation of the external environment promotes learning.

Proposals and initiatives are being put forward to include museum training in preschool and primary education curricula and teacher training curricula, kindergarten school management to sign a cooperation agreement with the local museum, devel-

op a plan, and plan teacher museum training every quarter. Although there are good experiences of teachers who provide training in museums in our country, there is a lack of public and non-governmental organizations and public participation and joint activities.

The museum is a learning object that is close to life and can systematically develop children's multifaceted knowledge. Because children's intellectual development and educational needs are different, museum training is the main source of learning and development by freely using their own knowledge and skills. Visiting a museum is more effective than reading, and the knowledge gained from the museum is meaningful and allows for thinking. Based on the above situation, a specialized training program is urgently needed in the museum.

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DEFINING SOCIAL FACTORS IN THE DEVELOPMENT OF GRAPHIC DESIGN

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Summary

Global development trends of the 21st century, art and culture, education reform, and electronic transition have provided equal and accessible opportunities for the citizens of Mongolia to receive education, and for the first time, regulations on open resource materials for culture, art, and education such as electronic and distance learning and content have been legislated for the first time, and it represents a major step forward in the field of social responsibility from the point of view of the development of graphic design.

Key word:

Social development, The art of visual communication, Morals, Roles, Immunity, Cultural heritage

Introduction

The development factors of graphic design are defined in the following categories based on the influence of social development and change. There are five factors: user, art and culture, economy, technology and information communication.
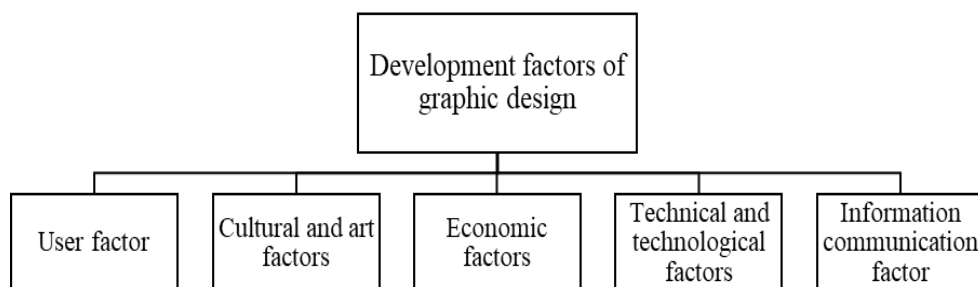
User factors

The user factor is that rather than the propose of ideas and demands to the product, today the manufacturers have started to appeal to the consumers through product advertisements, offering them new opportunities, new culture, and new uses. It usually involves the introduction of new culture and usage to users, such as smart technological advancements, eco-friendly usage, etc. The speed of social development and smart advances in technology continue to win over consumers with offers such as saving time and space, increasing work results, and developing remote communication. Per-

haps it will be called the «conquest of intelligent industrial products». For example, mobile phone, ipad, ipod

Cultural and art factors

The art and culture factor is a factor related to the delivery of the intellectual and material needs of modern users in digital form regardless of time and space to all age groups. Spreading and developing the values of creativity, faith, freedom, democracy, ethics, social justice and mutual respect through culture will be a factor of art and culture. Today, names, signatures, and stamps stick to the works of artists and sculptors, but not in the works of graphic design. The recognition and preservation of artistic and free activities is related not only to artists, but also to the collective activities and legal environment of art and culture experts. Artistic freedom and intellectual property rights are an important part of the sustainability of the creative production of art and culture.

Economic factors

Economic factors include profit-making activities. Product promotion increases sales. There are economic incentives behind not only advertising design, but also economic incentives hides behind other types and areas of graphic design. An important distinguishing feature from works of art is that design works and products are aimed at satisfying customer orders, preferences, and needs, and are valued to some extent by financial valuation. Due to the pandemic, the consumption of digital products has increased and the value has also increased to a certain extent. With the development of electronic applications, as the ability of users to acquire and use information improves, the quality of education improves and economic potential increases.

The results of human creativity are classified as intellectual property, industrial property, and copyright property. Intellectual creations of human beings that become products as a result of their introduction into production are industrial property, works aimed at satisfying human intellectual needs, thoughts, and aesthetic pleasures that are not directly involved in production become copyright property. «Developed countries of the world use intellectual property as a tool to improve national competitiveness and as a cornerstone of the knowledge-based economy. In order to increase the competitiveness of our country, it is necessary to develop an intellectual property system with quality patents, strong brands, and unique works of art and culture.» (Article 1 of the National Strategy for the Development of the Intellectual Property System)

Technical and technological factors

Technological and scientific achievements are becoming more and more important for humanity facing the challenges of globalization such as natural disasters and infectious diseases. For example, in this time of fighting against Covid-19, the G20 digital economy meeting was organized as a video conference, and in the context of the increased use of the Internet as part of infection prevention measures, the communication operators' commitment to dramatically expand accessible, safe, and cheap connections. emphasized the importance of cooperation. (Zagdtsesem U., 2020)

Expanding and popularizing the use of digital technologies, promoting digital policies and practices, and diversifying the production of digital content for consumers are technological factors in the development of graphic design.

Information communication factor

The process of transitioning from the age of industry to the age of information and communication is intensifying, building a knowledge-based society, and recognizing that knowledge and information are the sources of social wealth and values, and information and communication technology is widely used in all spheres of politics, economy, and society.

Information and communication technology is not only a determining factor in the development trends of all sectors of the modern world, but also a catalyst for the socio-economic development of countries.

Research methodology

The main product of visual communication is the activity of conveying information using images, colors and light. The art of visual communication today is defined not only by graphic design, but also by other forms of design. In a broad sense, the art of visual communication receives any information through the visual organ, and this method is no different from the method of communication. Visual communication is not only one-way, but also creates a reciprocal relationship.

Layout 1.4 Visual communication
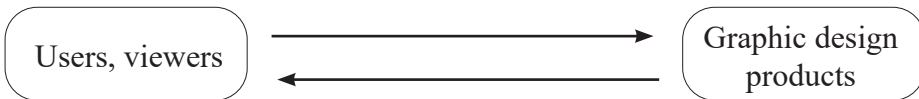
In modern times, the role of graphic design depends on the structure of information transmission in social communication.

The function of graphic design is to draw the attention of the masses to a specific piece of information that stands out from the mass of daily communication. The role of modern visual communication graphic design is classified as follows. It includes:
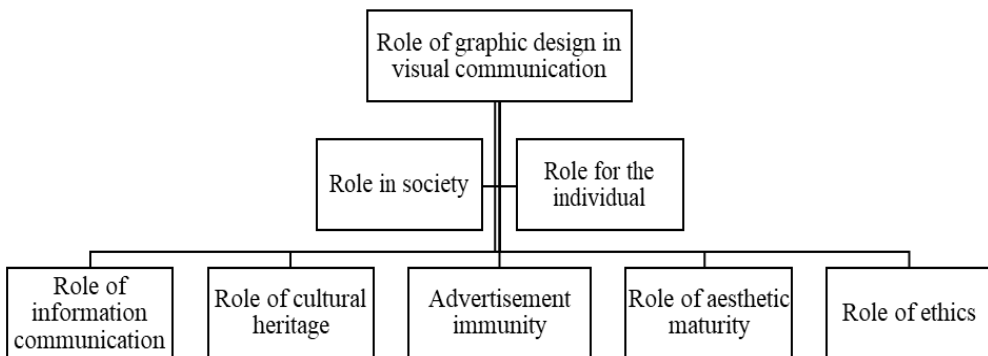
1. Role of information communication

The communication role is a service role within the social responsibility of visual communication or graphic design. Graphic design works can save users' time, shorten space, provide accurate and realistic information, and accelerate economic development. In recognition of the importance of the development and role of this industry,

the United National Organization has called upon the governments of the countries to improve the system of the industry to determine the state policy for the development of information and communication technology in each country. In the case of Mongolia, the government action program in 2003 stipulated «developing and implementing an Online Mongolia program». (Munkhjargal B., Davaadulam E., ULS, 2014)

The main product of visual communication is the activity of conveying information using images, pictures, colors and light. The role of graphic design is to draw attention to a single piece of information that stands out from the flood of daily information. While graphic design is an important part of information communication in the modern city, it also defines the role of cultural communication through visual communication.

Role of cultural heritage

Cultural heritage refers to things handed down from the past, tangible and intangible things that have their own value, meaning, and significance. According to Article 2 /definition/ of the «Law on the Protection of Cultural Heritage»: Cultural heritage is defined as 'the cultural heritage of the nation, and the world, that was created by human hands and minds and is a great valuable thing in terms of academic, historical, and artistic factors, as well as natural beauty', and it's divided into four categories: tangible cultural heritage, intangible cultural heritage, monuments, ethnic (traditional) cultural heritage, and these are classified by species. (Lee Soojeon, 2020, p. 23)

The term 'cultural property', which refers to the entire cultural heritage, has been changed to 'cultural heritage'. Today, it is time to discuss the issue of preserving graphic design works as cultural heritage, and the issue of determining the value and property rights of graphic design works is urgently faced. The value, meaning and importance of cultural heritage is considered from the point of view of art, nature, beauty, history, antiquities and general importance. In 1984, archaeologist William Lipe divided the types of cultural heritage values into associative/symbolic, informational, aesthetic, and economic values. (Lee Soojeon, 2020, p. 40)

These classifications are close to the classification of the role of modern graphic design, so it is believed that there is an opportunity and a way out to consider graphic design works as cultural heritage, and to preserve them and to consider them as a factor to improve the quality of life in the future.

2. Advertisement immunity

Nowadays, graphic design not only creates opportunities for people to freely interact with each other, but also with the environment of the city, in addition to factories and offices, on a voluntary basis. Regardless of where they live, graphic designers act as volunteer artists in urban spaces, making it easier for residents to interact with their urban environment. For example, the advertisements of products on the street showing where and in which stores are having discounts, etc. It can also be said that it serves as a big business card and advertisement for foreign tourists and other people, which shows the characteristics of the city's culture and unique attributes. Graphic design becomes the primary mediator of visual communication in urban contexts.

Residents of cities, who are exposed to the storm of information, have, to a cer-

tain extent, developed a mechanism or immunity to protect themselves from necessary and unnecessary social information. In this case, graphic design artists and designers need to pay special attention to the following points. It includes:

- Is there a tendency for graphic designers to neglect ethical norms and aesthetic requirements due to the fact that they give more importance to the object of information promotion?
- Whether clients require graphic designers to create socially irresponsible designs to promote their products

Some famous designers, for example, French designer F. Aperui said «Graphic design is not only a new form of art, but also an intersection of communication and art». However, in case of adherence to informational aesthetics and ethical standards, this definition will not work. Each element of a graphic design conveys content about information of ethics and aesthetics.

3. The role of aesthetic maturity

Graphic design of visual communication is a direction that is growing rapidly in the space of cultural communication, and it is becoming a highly demanded art that is growing without losing its artistic, aesthetic and ethical standards. Modern graphic designers are leading concepts, innovative ideas and approaches in the field of social responsibility. Therefore, the need to change the environment design solution through graphic design work and create a new tone and color is emerging with time. It can be seen that a new color of freedom, independence and faith is needed in the graphic design solution of the environment, which shows the Mongolian national style, and it can guide the new ideology of the future society in the right direction. The attitude and respect culture of graphic designers of other countries towards the visual communication artworks has become the defining of national culture and level of education. In this era of globalization, there is an increasing need to develop an attitude and maturity to respect the customs, traditions, artistic and cultural heritage of one's own country, as well as respecting the culture of others.

4. The role of ethics

One of the most central figures in the design ethics debate is the Austrian-born designer and educator Victor Papanek. In his book 'Design for the Real World: Human Ecology and Social Change since 1971', he launched a radical critique of contemporary design practice.

V. Papanik's criticism emphasizes the role of designers in promoting excessive consumption. This argument debates the fact that designers and other artists are held accountable for enabling real change in society through their design solutions and actions. It is believed that V. Papanek's criticism book became the «design activism» of the 20th century, which has attracted the massive attention of researchers. (Clarke, 2013).

Attention can be drawn to the unique differences between eco-design and sustainable design to provide the necessary knowledge for an ethical designer. Eco-design defines a design framework that considers economic, functional, aesthetic and safety issues, as well as the environmental issue that surrounds them, while sustainable design

is a broader concept that does not address environmental issues, but instead addresses the social issues of design. (Tischner and Charter 2001; Chapman and Gant 2007).

Conclusion

By defining the issues of social factors affecting the development of visual communication graphic design from the point of view of information communication, cultural heritage, advertising immunity, aesthetic development and moral factors, we can see that the art of visual communication plays an important role in the development of art, culture, aesthetics and ethics of young people.

Design for sustainable development addresses social issues. For example, «We're Mongolians content» is a concept adopted by the designers of the non-governmental organization. It should be noted that leading young designers through sustainable design education, including graphic design education, has a positive effect on the psychology of viewers and users, and is a factor influencing other designs, starting with information design.

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TRENDS OF MONGOLIA FINE ARTS IN THE DIGITAL ERA

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Abstract

The digital age is bringing radical changes to the art industry in terms of technology, ways of learning from art, ways of receiving art, appreciating and developing art. In this presentation, we mention the study of the digital age learning style and how the works of visual art are changing in the digital and innovation context.

Key words:

Digital painting, Digital environment, Art education, Innovation

Introduction

In the digital era, art education and art activity-related methods of producing, creating, using, and sharing have changed significantly, updated with the latest digital technologies and techniques, and the impact on art and society has increased a lot.

Artworks in the digital age have gained a lot of popularity in the contemporary art world and are being exhibited and presented in galleries, museums and online platforms. It offers artists new ways to creatively express their works and allows them to explore innovative techniques and concepts.

6.1 of Resolution 314 of the Government of Mongolia «On the Approval of Priorities and Measures of Creative Cultural Production» states that to support national digital content, its competitiveness, and the regional and national economic growth including virtual space, and to support streaming, NFT and metaverse for the flow of new sources of income and to develop cultural education. In this direction, the following activities have been carried out by the Ministry of Culture.

-Actions aimed at improving the public's awareness of tangible and intangible cultural heritage were carried out using new technologies to organize the infrastructure in a virtual environment.

-As part of the goal of preserving cultural heritage and historical monuments, it has become one of the cultural heritage brands of Mongolia.

-A field of wide choice has been created for the dissemination of virtual exhibits of tangible and intangible cultural heritage.

-In total, more than 20 contents were distributed to users free of charge to promote tangible and intangible cultural heritage.

-During the 7-day virtual event, a total of more than 1200 users from more than 10 countries participated in the event organized only within the framework of the cultural creative month, reaching 23,000 users during the 7-day period of the virtual event in terms of social media and marketing distribution.

Goal. With this presentation, we aim to provide an overview of how the works of Mongolian artists are changing and being updated in the digital age.

Main part

In terms of fine arts training, it is clear that students will acquire the skills of fine arts through traditional training, but as a teacher, the direction and teaching method is directed towards a mixed learning method. In the digital age, most students learn in a variety of ways. They combine different styles to suit their needs, switching between visual, auditory and kinesthetic methods as they learn. (D.Randy Garrison 2008) Art forms such as digital painting, 3D modeling, animation, and virtual reality have evolved significantly. Fine arts educators often need to incorporate these forms into their curriculum to prepare students for emerging opportunities in the creative field.

The global trend is already combining art with technology and bringing it to the masses in a simple yet easy way. Digital art or Online art refers to art or work created using digital technology. Since the 1970s, this type of art has been called by many names, such as computer art and multimedia art, and online art is considered a new type of art. (Pauk, 2006, p. 7-8)(https://unread.today/c/techworm-digitalart) In Mongolia, a unified art platform called «Monarti» was established. It is the first domestic virtual art land created to connect artists and art lovers regardless of space and to spread Mongolian visual arts without borders.(https://unread.today/c/spotlight-monarty)

Based on the research and development of virtual technology, the team of a digital solutions company in Mongolia has started to develop Guyuk, a metaverse of Mongolian people.

The GUYUK metaverse, which is the first migration metaverse, currently has many places of historical and cultural significance, such as the virtual museum of unique valuable works of High Saint Zanabazar G., the museum of portraits of great kings of the Golden Dynasty, and a virtual tour of the natural beauty of Mongolia.

In terms of app development, there are 250 app developer individuals and organizations according to the Mongolian Software Developers Association. (Basic study of creative cultural production, p. 297). Other than that, there is currently no research on app development.

Graphic 1.Number of the world's top apps
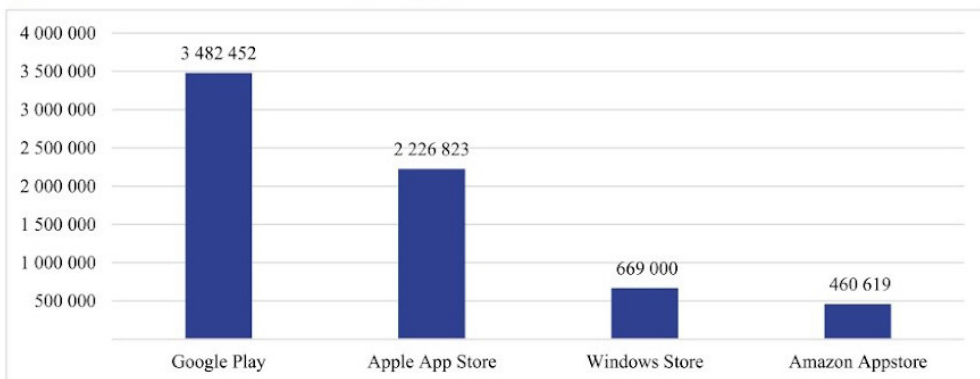
Digital art allows usage for interactive and multimedia experiences. Students can create art installations, multimedia presentations, and interactive websites to expand

their creativity beyond traditional tools. As that goes, art educators in the digital age also consider ethical issues related to copyright, digital ownership, and the impact of technology on the arts. Students should develop an attitude of respect for intellectual property rights and cultural sensitivity.

Fine art teachers must adapt to the rapidly changing digital environment. This includes keeping updates on new technologies, software, and trends, as well as teaching students how to adapt and integrate artistic innovation into their practice.

In recent years, our artists have been focusing on the development of themes, ideas, methods of expression, free choice of materials, and the search for technology.

Artists working in the modern art genre need to carefully study and compare the selection of materials and technology. This is something that must be done when it comes to the quality of the work, the appropriate delivery to people, and to not affect the main idea negatively.

The «real appearance» of fine arts is moving to the «virtual». An innovative work of art will stimulate the audience through multiple senses at the same time, creating an interesting experience. This exhibition called «Bulgaa Contemporary Art Exhibition», which was presented at «Best Art Gallery» as part of «Ulaanbaatar International Art Festival» in Mongolia in 2019, was the first exhibition that used Augmented Reality (AR) Virtual Interactive technology. In particular, the main goal was to introduce and spread art to children and youth using the latest technological advances. By downloading an app called Artivive to your smartphone, you can read selected images with annotations to see 3D animations and hear piano notes. Download and install the Artivive app on your phone and enjoy the works below.

Picture 1. Fly high	Picture 2. Yellow story	Picture 3. Reflection
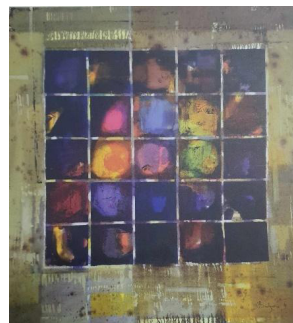
In 2016, the «Listening to Paintings» exhibition was jointly presented by Soronzonbold S., the national……. composer, and artist Bulgantuya D.. It is possible to listen to the tunes written by S. Soronbold, the state prize laureate composer, for the pictures. It aims to stimulate the visual and auditory organs by combining not only seeing the work, but also to convey the feeling of experiencing art from another perspective. The catalog of this exhibition was released with a CD. Also, today's music is no longer limited by the sound of instruments, it is becoming richer with the possibilities of sound, and every country is enriched with its own characteristics of folk, ethno, and other art forms, developing into synthetic, experimental, and contemporary approaches such as new media, multimedia, sound art, etc.

Picture 4. Holy wish

Artist Bat-Erdene B. is taking a step forward in the development of Mongolian video art with his interesting and powerful video installations, with his very sophisticated and detailed performance, and is turning another page in the development of contemporary and new media art. (Batzorig, 2021, p. 230).

Visit Bat-Erdene B.'s «Resurrection» exhibition by visiting the link in the bibliography.

Also, digital artist Enkh-Oyun presented the first Mongolian digital artwork «Rain» art-market exhibition. (https://ergelt.mn/news/109/single/22306)

Picture 5.

Conclusion
- There is a need to create national digital content, digital textbooks, virtual environments, techniques, equipment for students, and to create motivation to learn new environments through arts education.
- The online training that we use now is a digitized form of training that we used before. It means that you are viewing the concepts taught by the teacher on the blackboard using applications such as MS Teams and Zoom on the screen of your computer or smartphone. In other words, it is another form of passive learning. But virtual learning is a different process where teachers and students use their own avatars to learn together using computers, smartphones, and VR devices in a virtual (artificial) environment created on a computer. Therefore, there is a need to develop VR content in this training.
- Today, new forms such as artificial intelligence painting, NFT (digitally transformed) etc. are developing at a rapid pace. On the one hand, this is one of the

inevitable progress of development, but it is assumed that it will not be able to replace the works of arts, talents, and feelings that are expressed through the development of the brain, mind, and feelings of a real human being.

- In the digital age, people tend to perceive things visually, but it is believed that it's necessary to support kinesthetic or physical action (sense of smell, taste, touch).

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THE NOMADIC EMBROIDERY TRADITION IS A SOPHISTICATED MONGOLIAN INTANGIBLE HERITAGE.

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Abstract

Stitching Coin Table represents one the most valuable of all Mongolian contributions to the artistic and cultural history of mankind. This is a tradition, whereby Mongolians added decoration, embroidery, stitching and patterns to their traditional clothes and other traditional items - using many kinds of thread. The *coin table* is a technique that can raise patternmaking and decoration to a high level of artistry. It uses special and sometimes unique stitching techniques, shapes, tools, and materials.

Mongolia should conserve this heritage for the benefit of the younger generation by integrating it into our lives and thus restoring it.

Keywords:

Intangible heritage, Technology, Traditional Handicrafts, Coin Table, Embroidery, Intangible cultural heritage.

From the earliest times, our Mongolian ancestors have passed on the heritage of symbols that they created, and which are now to be found in the artefacts that they made.

There are 5 main categories of nomadic intangible heritage, and 1 of them is the embroidery culture.

Researchers have found that the origins of embroidery go right back to the beginning of primitive human society. Mongolian traditional embroidery has resulted from the creative innovation, hard work, skills, and crafts.

Originally, Mongolian embroidery served the practical needs of inhabitants before it became 1 of the wonders of human creativity. It had practical application as part of communications as well as being an art form. As it transitioned from an ancient tradition to developing modern embroidery, it has served practical human needs while at the same time giving both aesthetic and intellectual pleasure. Younger generations have been learning it with growing interest and it is 1 of the tools that are used to develop practical craft skills.

To repeat, this skill forms part of the Mongolian heritage and has contributed richly to the cultural heritage of the world.

According to researcher Avidai,Ch in the book "National Crafts and Techniques of the Mongolian Nomads", it was the custom to give a small wooden stitching box to 10-year-old girls on an auspicious day, to teach them stitching and embroidery from an early age. From that age on, a girl would collect tools like needles, tape measures, scissors, and fabrics, and begin to learn how to embroider and to stitch.

Embroidery is a handicraft. It includes features of aesthetic expression, the skill of the Artisan - and ethnicity. It is a craft, and it cannot be reproduced precisely ever

again which is 1 of the things that distinguishes craft from other artefacts.

According to the scholar Yadamjav (2004) There are 5 main categories in fine arts – painting, sketching, sculpture, architecture… And crafts. There are many forms of craft: carving, sculpture, paper quilting, knitting, applique, painting, rugs, ornaments, felt products, wood and metalwork.

The art of embroidery has developed over the centuries. Its use as decoration has spurred creativity art and distinctive craftsmanship around the world, helping even to maintain the uniqueness of nations and peoples. In the case of Mongolia, the craft of embroidery has illustrated the ways of life and the ambitions of nomads, and in so doing has created special techniques, designs, and patterns. Although rooted in people's practical needs, as it developed it became the foundation for knitting techniques, sewing techniques and other relevant craft technologies. A scholar Songino .Ch (1999.p3) Has defined the "craft" of embroidery as covering all the following skills: designing, measuring, making patterns, stitching, sewing, gluing, developing, decorating, tying, braiding, and knotting. In other words, - it is mainstream art that involves many different skills and activities.

As the ancient nomads settled in pasturelands, they bred and domesticated wild animals. That led them to develop techniques of transforming raw materials into products. Such activity led to the development of sewing fabric, processing metal, and producing woodwork. As time passed, the nomads developed their techniques to create distinctive styles which they then passed on through the generations.

And the discipline involved affected the upbringing of children, encouraging them to develop habits of study and hard work.

As older people shared their distinctive traditional techniques, so young people developed craft skills and "practical intelligence". This has *produced several beneficial effects, viz:*

- *mental preparedness for life.*
  Understanding the importance of working hard – and flexibility in work. That develops a child's ability to anticipate future developments.
- *Developing motivation*
  the child must think about how craft results were achieved and as they see the results, they develop enthusiasm for the process.
- *learning how things work.*
  How am I going to do this thing? How strong do I need to be? What care do I need to take? Will it require perfect eyesight? How long should I be prepared to sit patiently? What time do I need to allow to be punctual and to deliver on time?
- *Practicality.*
  What is the optimal sequence of actions and activities? How will I make it/ cook it/draw it/stretch it out/braided/wrap it? How much time is it going to take - hours, days, weeks, months?
- **Learning lessons.**
  At the end of the process - what have I learned? What mistakes have I made and how can I correct them to achieve good results? How does my product compare with others?

- *developing-self-esteem.*
  Learning that you can do things well, being motivated to try again and discover how to do even better, and so forth.
- *thinking ahead*
  learning to select the right tools and materials in advance; noting errors and missing steps in the process to avoid such mistakes in the future; preparing design solutions and selecting the optimal one; deciding what inputs will be needed and calculating costs and revenues.
- *innovation.*
  Developing new designs means thinking about changing colours, shapes, sizes modelling and learning advanced technologies. It involves selecting appropriate new raw materials and tools.

The reform of all kinds of technological education in the digital age will require the upgrading and developing of traditional craft technology in Mongolia. Our studies show that there has been some such study in embroidery and a small amount of research in developing the techniques of *coin table*. Developing modern digital techniques makes it even more important to introduce the fundamentals and the teachings of our craft heritage - both tangible and intangible - to the next generation.

The forms of embroidery are: flat, free-form or raised forms, stitching materials that use thread, braid, knots, and fabric - and threads that can be self-coloured, white and golden.
Embroidery stitching can be divided into:
- straight stitch
- chain stitch
- back stitch
- feather stitch
- running stitch
- outline stitch
- Cross stitch
- Oriental decorative stitch.

We have covered many kinds of embroidery stitches - and we can concentrate on stitching techniques with the coin table now.

Literature review of ribbon making stitch using coin table.
- Art researcher Batchulun. L wrote (Soyol Journal, 1982) about discovering the ribbon-making tradition and artefacts that were kept in the museum in Mandal-Ovoo soum in Umnugobi.
- Chuluunbat.D, the craftsmen, brought costumes to the attention of the public in Ulaanbaatar in 1989
- also in 1989, Majaa, the museum director in Umnugobi, wrote a brief introduction to coin table knitting in the journal "Mongolian women".
- In 1990, the teacher Tseren-Ochir.Ya published an article in a journal called "Mongoljingoo" which introduced the tradition and the techniques of making embroidery - probably the 1st full article on the subject.
- From 1987 to 2008, the researcher Batbuyan.Ts successfully taught 5400 sec-

ondary school pupils, 357 technology student teachers and student designers about using a coin table.

- In 2009 and in 2014, researchers Tseren-Ochir.Ya, Batbuayn.Ts published a book entitled "Embroidery Crafts with the Coin Table".

Embroidery stitching with a coin table is a traditional craft which was also used to make ritual objects such as traditional knives. Examples of coin table embroidered artefacts can be found in the Bogd Khan Museum, the National Museum, the National History Museum, and the local museums – Erdenezu, Dundgobi, Umnugobi provinces; they include skull caps with pearl patterns, capes, clocks, gardens, snuff boxes, decoration on traditional Royal groups including the toys and other belongings of the 8thBogd Khan.

At the age of 5, the 8th Bogd was discovered, declared, and arrived in Mongolia from Tibet. He was introduced to Mongolian customs and lifestyle, and he was taught religious rituals\ - and shown objects decorated with coin table embroidery stitching. There was a small model ger, in pieces, which could be assembled like a puzzle, from different parts - walls, poles, columns etc.

Picture 1
- *Personal possessions of the 8th Bogd and Queen Dondogdulam.*

How the coin table can be used to embroider Ribbons.

Picture 2.

"Coin table stitching" belongs to the Mongolian decorative arts and crafts tradition. Stitching embroidery onto ribbons with a coin table features special techniques tools and materials. Coin tables come in different shapes and designs – for example, they can be ordinary, for special occasions, or equipped with a sewing box.

According to the art historian Batchulun, the coin table in the Umnugobi museum has a sewing box, while the one in the museum in Mandalgobi is adjustable. The "An embroidery coin table zoos-shiree" design is elaborate, representing a ger, including the central column and roof, and thus symbolizing Mongolia as well as the ger.

Stitching is a decorative art in the luxury category. It often uses silk thread – and many colourful threads resemble the colourful poles in a Mongolian ger. Stitching decorates many accessories, such as snuff pouches, purses, hats, skull caps, deels, bed-

sheets or traditional boots.

It serves to decorate costumes with traditional patterns, and offers many advantages – like:

- Replacing applique – very fine ribbons can carry single or two-colour stitching.
- Coin table stitching is much faster than applique – a 120–150-centimetre ribbon can be made in one hour.
- Using 4 to 32 threads at once allows the width of the thread to be anything from 0.2 to 2 mm.
- Finer threads make for nicer ribbons. Ribbons stitched with 12 to 13 threads look beautiful and very neat.

Picture 3. *Types of coin table stitches.*

The curriculum for the "Traditional technology" course for training art teachers includes coin table stitching.

The course teaches students traditional models, designs, decorations, and ornaments. Students learn about materials and calculating financial aspects. They learn how to make objects while following instructions as well as improving their ability and creating their own objects or products.

Students of the "Traditional technology" course develop knowledge and skills in several areas:

1. design stages; improving creative skills, how to use tools safely, how to select the optimum materials, match colours, using symbols, techniques of assembling components, research methods, and documenting the technology.
2. Prototyping: drawing, graphs, illustrations, making detailed plans. Making prototype objects to specification, using cotton or other materials to decorate them.
3. Self-improvement – continuing to study on their own after the course is complete, using the knowledge acquired through the training. They will improve their personal resilience and develop better materials, specifications, operational safety – and get steadily better results.

Student assessment of the course.

40 students of the first year of design technology took the coin table weaving course and when surveyed, reported the following weaknesses and strengths of the classes.

Table 1.

Positive experiences	Negative experiences
Improved concentration	Stitches uneven
Developed creativity	Getting the right tension - tightness or looseness of the thread
Improved hands/fingers mobility	Selecting the right thread
Education in making good stitches	Getting the ribbons to match
Ability to knit multiple colours in ribbon making	Developing specifications
Using 4 to 32 threads to make ribbons	Making mistakes in linking patterns
Ability to focus - mindfulness	Time management

Conclusion
- Technological education that meets modern requirements can successfully teach traditional crafts to the next generation.
- Nomadic Mongolian crafts represent an independent art form that includes many types of skills, such as designing, measuring, weaving, sewing, pasting, starching, embroidering, decorating, expanding, invigorating, braiding, folding, tying, knotting, and it is a big industry.
- Coin table stitching using a variety of threads is one of the unique types of Mongolian embroidery. It reflects the The tradition of decorating articles and clothes with the coin table stitches, and so the students' creativity will be developed and the knowledge handed down by their ancestors from ancient times will be passed on to future generations.

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ЭКСПЕРИМЕНТАЛЬНОЕ ИССЛЕДОВАНИЕ ОЦЕНОЧНОЙ МОДЕЛИ CDIO НА УРОКЕ "ШВЕЙНАЯ ТЕХНОЛОГИЯ"

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Аннотация

В статье рассматривается, как модель оценки CDIO может быть реализована на практическом занятии урока Швейная Технология для программы бакалавриата.Основное внимание в исследовании уделяется изучению того, как студенты творчески применяют знания в реальной жизни. Чтобы исследовать применение знаний студентов мы переработали учебный стандарт и учебную программу курса "Основы Швейной Технологии", применив модель оценки CDIO. При применении этой модели исследование доказывает, что можно оценить творческие способности студентов и их отношение к обучению.

Ключевые слова:

Учебная программа, Результаты обучения, Оценка знания, Навыки и отношения.

Введение

Согласно международным стандартам, оценка личной деятельности рассматривают в двух смыслах слов как "Evaluation" и "Assessment". Evaluation-используется для обеспечения общей оценки и обеспечения качества работы в то время как Assessment используется для оценки способности к обучению. личных взаимоотношений и способности работать независимо и в зоманде на теоретическом и прикладном уровнях.[1,С.204]. Оценка – это часть обучения, которая проводится для определения того, насколько студенты овладели сложными компетенциями, которые необходимо приобрести в процессе обучения. Поэтому исследователи продолжают подчёркивать важность правильных методов оценки при обучении студентов тому, чтобы ұщони учились знать, понимать или делать что -то, а не учиться ради оценок.Чтобы поддержать студентов, учителям важно не только учить, но и оценивать успеваемость и развитие студентов. Помимо знаний и навыков, ещё сложно оценивать отношения. Учёные в США считают, что отношение формируется на основе идей, убеждений и и взглядов. В Японии измеряют в трёх измерениях как а) интерес, б) мотивация, в) отношение. [2,С.302].

В учебной программе чётко изложена методика оценки знаний, навыков и отношения студентов. Система HSE внедряется в международнем уровне. Это система, в которой высшее учебное заведение прогнозирует результат своей учебной программы (результат обучения по программе PLO) и оценивает знания, навыки и отношения, которые студенты приобретут в ходе программы обучения [1,С.206]. Система образования, ориентированнай на результат состоит из трёх

основных частей:

- Раздел результатов обучения
- Раздел преподавания и обучения
- Раздел оценки обучения.

Методы и формы оценивания открыты и реалистичны с учётом их умственных и личностных характеристик:

1. Будет активирован процесс обучения
2. Признание важности обучения
3. Будет развита способность учиться и работать самостоятельно.

В последнее время применяется метод обучения учению. Это хороший способ дать студентам возможность учиться и мотивировать их учиться уверенно. Исследователи считают, что ребёнок, который учится путём обучения, имеет способность иницировать, обсуждать вещи, выражать свою точку зрения, находить решения проблем и оценивать. Следующие результаты были получены путём разработки и внедрения методологии оценки обучения с использованием модели CDIO

Основная часть.

Хотя мы имеем опыт оценки знаний, умений и навыков студентов, мы не смогли предложить полного решения о том, как оценивать человеческий прогресс и развитие, как сделать оценки реалистичными и как использовать информацию, полученную в результате оценок, в нашей деятельности. Поэтому нам необходимо изучит опыт многих стран и предпринимать шаги для обмена опытом друг с другом.

В последние годы особое внимание уделяется развитию и оценке навыков самосознания и обучения. Учёные из Финляндии провели исследование по развитию навыков саморегуляции и обучения и считают, что можно направить процесс обучения на научной основе. Они оценивали обучение по трём компонентам: внимание прочитанного, аналитическое мышление и логическое мышление. [3,C.157На основе содержания и методологии курса была разработана и внедрена следующая методика обучения. На курсе "Технология Шитья" каждый студент учится делать одежду, выбирает материал для одежды, шьёт её правильно и экономично, понимает вышивание по упрошенноы схеме обозначений, а затем читает любой швейный образец и учится шить соответственно.. Таким образом, исследование показало, что модель пост- оценки подходит для этого урока. В ходе курса знания будут проверяться с помощью тестов, письма и рисования. Навыки оцениваются путём чтения, интерпретации, рисования и демонстрации выкройки шитья, а отношение оценивается путём наблюдения за участием, инициативой, консультированием, обменом знаниями и отношениями студентов.

Методика обучения, ориентированного на результат /CDIO/, была реализована в курсе "Основы Швейной Техники" в педагогическом вузе, обучение проводилось в одноранговой, дскуссионной, групповой и электронной формах.

Во время обучения наблюдаются следующие реальные результаты. Это:

- Студенты начали поиск, используя несколько источников, чтобы упростить технологию.
- Студенты, которые понимали схему шитья, сначала учили друг друга, и время, чтобы понять и использовать её, было быстрее.
- Качество и дизайн заданий улучшилось в результате групповюых заданий..
- На качество посследующей работы повлияла панельная дискуссия, сравнивавшая работы, выполненная командой..

Действия студентов в классе включают эксперименты, наблюдение, обсуждение, сотрудничество и сравнительный анализ.
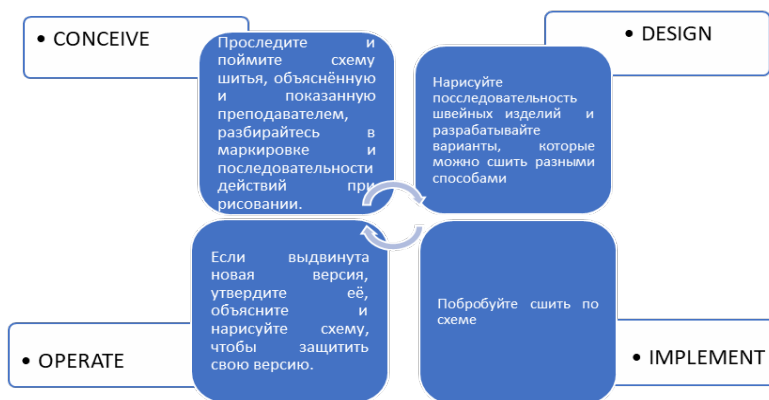
Оценивая вышеуказанные учебные мероприятия, процесс обучения показал, что проводить уроки в интересной форме эффективно, чтобы направлять студентов к творческой деятельности, а также направлять, советовать, помогать, вселять в них уверенность и поддержку. После проведения пилотного обучения по вышеуказанным формам оценка проводилась с использованием следующих методов. Оценка должна быть объективной, справедливой, блогоприятной и открытой. Например, на уроке "Основы Швейной Техники" студенты проверят исходный вариант изделия и исправит его. Первый стежок не оценивается. Это рассматрывается ккак форма поддержки, позволяющая студенту исправить ошибки. Это помогает быть объективным и реальным при оценке произведения искусства,и объясняя студенту плюсы и минусы того изделия.

Методика оценки разработана и внедрена в курсе "Основы Швейной Техники". Здесь показан пример провения технологии "Карманная Швейная Техника" .

Таблица 1.

Способность		Оценка		
		Знание	Умение	Отношение
Учиться усваивать знания	Навыки чтения и понимания	Тест Назвать и объяснить схематические обозначения	Чтение схемы	Посещаемость, активность и способность работать независимо внеучебного времени.
	Навыки аналитического мышления	Знать требования к схематическому чертежу.	Объяснять и сравнивать диаграммы, находить сходства и различия. Разработать возможные варианты экономного разрезки.	Меры по экономии материалов, использование кусочков. Дать советы другим, помогать
	Умение мыслить логически	Правильно пронумируйте последовательность шитья на схеме и определите, какие типы шитья можно использовать на каких участках.	Нарисуйте схему с другой стороны и покажите сшивание каждой части. Нарисовать графическую схему технологии	Выдвинули ли новую идею Распространение знаний
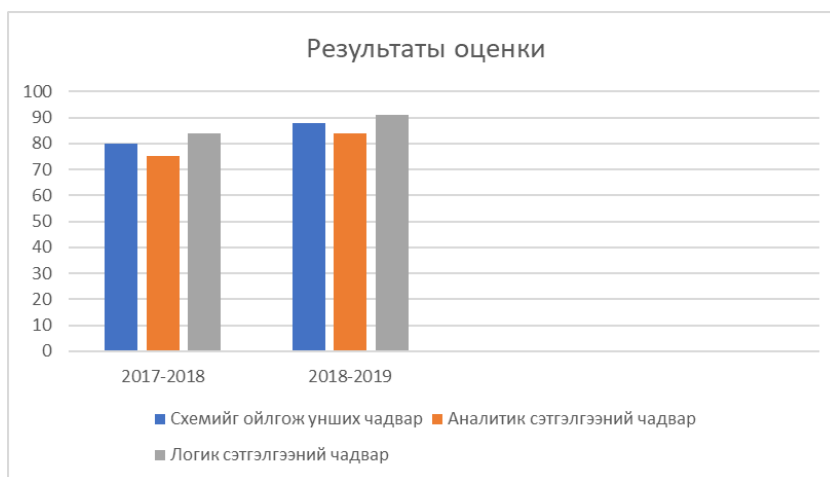
- навыки понимания прочитанного с помощью диаграмм

- навыки аналитического мышления

- навыки логического мышления

По результатам оценок можно видеть, что у студентов повысились навыки прочитанного на 8%, навыки аналитического мышления на 9%, и логического мышления на 7%. В 2017 -2018 учебном году обучение было организовано с использованием практических методов обучения, и у студентов была меньшая

мотивация к обучению. С внедрением методики обучения CDIO в 2018 – 2019 г.г. активность и уверенность у студентов в себе повысились.

Оценка: Оценка стажировок и самостоятельных работ: студенты завершат и защитят 18 стажировок и 3 самостоятельных работ в течение семестраПо основам швейной техники каждый студент выполняет самостоятельные работы и задания по выбранной им теме, рассчитывает и обобщает результаты исследований и экспериментовв.

Например, Задача 1-3. Развивает у студентов навыки мышления с помощью диаграмм. А. Определите, какие материалы представлены какими символами..Б. Правильно определите какие части шва прошиты и сколько слоёв материала прошито. В. Правильно определить порядок швов и т.д..

Или вы можете воссоздать элемент (компонент) после шитья и показать его на схеме. Есть ряд умственных и практических задач, таких как показать и объяснить, что шитьё можно сделать легко. Экспериментируя с методологией CDIO в технолошгии шитья, каждый студент смог оценить свой стиль обучения и объективно оценить свои способности. А со стороны преподавателя того, что достиг ли урок желаемых результатов и были ли подходящими методы обучения и учебные пособия.

Вывод

На основе проведённых исследований и экспериментов мы пришли к следующим выводам:

1. Вопрос оценки качества образования стал важным вопросом для всех образовательных уровнях.
2. Каждый преподаватель должен понимать, что принципы доверии, поддержки, справедливости и открытости в оценке являются важными принципами современной оценки качества преподавания.
3. Реальным требованием современного общества является творческое проведение занятий в классе посредством обсуждения, экспериментирования, сотрудничества и исследований. Поэтому использование этого метода в наших собственных уроках дало положительные результаты.
4. Представлен возможность таких вариантов оценки знаний, навыков и отношений студентов.

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ART STUDIES – IN A DIGITAL ENVIRONMENT

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Abstract

In the contemporary landscape, the Internet has ushered in a new era of global scientific discourse, enabling the exchange of ideas and texts across geographical and cultural boundaries within virtual communities. This progression aligns with the perspective of the German scholar M. Scheler, [1] who advocated for a comprehensive and systematic approach to understanding the fundamental sources of knowledge, encompassing their development, resolution, preservation, and transmission.

To pursue this direction, it is imperative to delve into the origins of knowledge, its epistemological underpinnings (comprising theories of knowledge and logic), as well as its evolutionary-genetic and evolutionary-psychological connections. This investigation extends from the study of knowledge's progression, spanning from animals to humans, from infancy to adulthood, and from primitive societies to advanced civilizations. Within this broader context, cultural sociology, including realms like religion, art, law, and the dynamic evolution of «institutions» shaped by the sociological fabric of human societies, rulers, economic entities, and other factors, remains a pivotal area of research.

Simultaneously, the study of the theoretical framework of the digital society and the ramifications of the digital revolution has taken precedence. This paper seeks to accentuate the role of art studies as a valuable instrument for comprehending the intricacies of the digital society and its surrounding milieu. The essence of the digital revolution reverberates through all facets of societal consciousness, including the sphere of art. The imperative to elucidate the nature of art has arisen in response to the profound transformations brought about by the digital society, characterized by the inundation of information, and the erosion of traditional boundaries that once demarcated distinct societal realms.

Keywords:

Digital revolution, Digital society, Digital art, Information technology, Art phenomenon, Art studies

The overarching and distinctive attributes, as well as the regular patterns governing the existence and evolution of any social organization, are intricately tied to the unique characteristics displayed within the collective, group, communal, and individual endeavors of its members. Consequently, a meticulous examination of these circumstances and perspectives becomes indispensable, affording insights into the distinct traits of historical epochs. Through this analytical lens, we gain a comprehensive understanding of the multifaceted catalysts underpinning social phenomena, thereby

facilitating effective guidance of the society in question. The historical lineage of interest in social organization can be traced back to antiquity, where thinkers delving into the collective existence and structure of human societies accorded significant attention to a spectrum of issues encompassing art, aesthetics, politics, governance, legal systems, and the configurations of state administration.

The more individuals are capable of comprehending and internalizing their own religious convictions, beliefs, and moral principles, and aligning their conduct with the dictates of their intellect and conscience, the greater their fortitude and autonomy inevitably become. A noteworthy observation is that many branches of scientific inquiry have their origins in specific epochs of historical development, subsequently evolving into autonomous disciplines at varying points in time. The innate human inclination to unravel the mysteries inherent in the surrounding environment and phenomena consistently engenders novel realms of knowledge.

Consequently, humanity has engendered diverse domains of scientific knowledge through the course of cognitive evolution. The realm of art, in particular, has matured into a substantial area of intellectual pursuit. The discipline of art studies has evolved into a mode of thought that not only encompasses the profound expanse of human creativity but also serves as a medium through which individuals engage with and interpret the world in an artistic manner. Commencing its journey as an offshoot of the art of imitation, it has metamorphosed into a distinct domain, characterized by the profound capacity for imagination.

The field of Art Studies constitutes a scholarly discipline tasked with delineating the aesthetic essence of art, elucidating the origins and evolution of artistic expression, analyzing the criteria for classification, exploring the thematic content and creative processes inherent in art, and discerning the role of art within the cultural and spiritual fabric of society. It is widely acknowledged that the production of artworks by humans has, to varying degrees, been influenced by sociocultural factors across epochs. A social theory of art serves to unveil discernible patterns governing the emergence of art forms, thereby offering insights into the traditional demarcations and differentiations between art and non-art.

Artistic and literary critique, too, remains intrinsically tethered to the sociocultural milieu, wherein the inherent nature of artistic works aligns, in essence, with other forms of human activity. It is imperative to recognize that art does not constitute a static and universal construct; rather, the critique of artistic practice and the organizational dynamics of the art realm itself emerge as products of sociocultural evolution. A comprehensive grasp of these phenomena necessitates an unwavering commitment to understanding their historical development. Such shifts in the status and dynamics of the artistic phenomenon inevitably precipitate transformations in the philosophical discourse surrounding art.

Presently, we inhabit a dynamic world marked by ceaseless and rapid transformations. The proliferation of information and communication technologies has permeated the human experience, with digital technology, in particular, exerting an unprecedented influence on contemporary life. Over the past three decades, communication and computer technologies have burgeoned in a zenith of development. The advent of the Internet, the World Wide Web (WWW), and mobile communication has seamlessly

integrated into the fabric of contemporary society, becoming an indispensable facet of every individual's daily existence.

Our quotidian experience has undergone a profound transformation, with the ubiquity of Information and Communication Technology (ICT) platforms giving rise to the emergence of virtual cyberspace, which now constitutes an integral facet of individuals' lives. This paradigm shift is characterized by the Information Revolution, facilitating seamless communication with a diverse range of individuals and direct access to a wealth of information and knowledge. Consequently, this transition encompasses the technological or post-industrial revolution, the shift towards the information or network society, and a revolution in human consciousness. These interrelated trends collectively shape the prevailing zeitgeist.

However, it is worth noting that certain scholars [1] have posited that the contemporary digital milieu, predominantly influenced by corporate interests, poses a threat to social cohesion. For instance, Stiegler [2] has sounded a cautionary note, contending that this transition carries the risk of diminishing intellectual and scientific knowledge. Stiegler characterizes digital technology as a «pharmakon,» a term derived from Greek, signifying both a remedy and a poison [3].

The duality of digital technology is evident; on one hand, it holds the promise of expanding the horizons of human development, while on the other, it assumes a disruptive role. This potent force jeopardizes hermeneutic knowledge, erodes the capacity for reflective thinking, and undermines societal unity. Stiegler's warning underscores the era's tumultuous nature, marked by the proliferation of misinformation and the ascent of divisive and antagonistic political factions.

Consequently, it becomes evident that the Information Revolution represents a technological advancement facilitating knowledge acquisition and daily task execution. Nonetheless, it precipitates substantial shifts in the conception of human existence, both at an individual and societal level. American educator and architect William Mitchell [4] has articulated these transformations, contending that the proliferation of the Internet and the advent of artificial intelligence have fundamentally altered the perception of human nature. Mitchell asserts that the demarcation between man and machine is no longer tenable. Complete virtual networks virtually converge with human beings at a biological level, culminating in an augmented self-awareness diffused across the spatial expanse. This paradigm shift redefines temporal and spatial constraints, empowering individuals to engage in work, communication, consumption, and a plethora of other activities from nearly any location on the globe [5].

These transformations have indisputably reshaped human interactions, the relationship with the natural world, and self-perception. Among the myriad attributes of cyberspace, its inherent unpredictability stands out as noteworthy. The digital metamorphosis is eroding established traditions, prompting inquiries into its ramifications on human culture, encompassing domains such as art, literature, and education. In the prehistoric epochs of human history, information access was a scarce commodity, and prior to the advent of the Internet, encyclopedic knowledge reigned supreme as the epitome of wisdom. It was this knowledge that functioned as a guiding compass for individuals and society, with the premise that the more one knew, the better equipped they were to navigate existence. In the contemporary digital reality, a fundamental

shift has occurred, pivoting the emphasis from knowledge per se to the capacity for focused attention. Thus, it is posited that individuals must acquire the skills to navigate the intricate information landscape. This fundamental alteration in human consciousness has had a profound impact on the contours of human culture, prompting a reconsideration of the very definitions of information and knowledge.

In modern times, the discipline of art studies has evolved to encompass an analytical endeavor that dissects aesthetics and art through the prism of logical connections forged between experiences, external and internal structures, principles, representations, and expressions. Art has departed from the notion of totality, embarking on a trajectory characterized by the assertion of individuality through its distinct forms. The quest to elucidate the essence of art grapples with the enduring query, «What is art?» Empirical, rational, and irrational paradigms are scrutinized in pursuit of a comprehensive answer to this question. Notably, the axiological dimension is not relegated to the periphery. Particularly in an era where art theories, doctrines, and conceptual frameworks proliferate and undergo multifaceted discourse, theoretical knowledge and ideas assume a pivotal role in the delineation of art.

The genre of art is delineated as the creation of artistic content, conjoined by material and spiritual attributes, each manifesting in diverse and unique ways, governed by the laws of beauty and modes of thought. In the realm of human existence, spiritual cultures, including philosophy, religion, and art, exert a profound influence on daily life. The intellect, as a distinct manifestation of human cognition and values, transcends utility and self-interest, finding its wings in the ethereal realms of spiritual joy—beauty, knowledge, and wisdom—bestowing upon individuals the most profound realm of creative freedom. The creative endeavor of the intellect constitutes a sui generis spiritual world engendered by the potency of human thought. The Digital Mind represents an equally unique phenomenon, wherein, alongside physical sensations, the depiction of hitherto unseen phenomena gives rise to art of incomparable richness. Primarily, this phenomenon is intrinsically tied to the virtual domain of cyberspace. Given the ubiquity of virtuality in contemporary life, it is evident that networked environments cast a discernible influence on the intellectual culture of individuals.

The culmination of the digital mind's cultural expression finds resonance in the rapid proliferation of diverse human activities within networked environments, characterized by the creation of an extensive array of textual, photographic, and video-based content, spanning varied subjects and forms. In the era preceding the digital age, content production and dissemination adhered to stringent regulations, underpinned by a foundational demarcation separating authors from their readers and audiences. In the digital epoch, the role of authorship has undergone a paradigm shift, rendering the erstwhile distinction obsolete. Consequently, an expanding cohort of individuals is actively engaged in constructing personal microcosms and residing within the milieu of this emergent culture. A discerning comprehension of the transformative dynamics permeating the artistic landscape under the influence of information, communication, and technology is of paramount significance. Art studies occupy a pivotal role in this transformative process. As the world undergoes rapid transformations, the domain of art assumes a consequential role in equipping individuals with the intellectual tools to navigate the uncertainties inherent in the juncture bridging yesteryears and the im-

pending future.

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OPPORTUNITY TO INCLUDE DESIGN PRINCIPLES AND APPROACHES IN COURSE CONTENT

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Abstract

The pavilion is a temporary dwelling used by Mongolians for thousands of years due to their nomadic lifestyle, traditions and felt culture. The Great Mongolian Dictionary defines a pavilion as a large tent with a square frame made of fabric, a cool shade, a shed built on the wall of a house or door, and a pavilion door.

The knowledge, content, and attitude of graphic design students continue to change rapidly.

Some of the concepts of design in the program that we have been following are changing a lot, which is inevitably related to the development of the electronic world, which everyone uses, and the intelligent technology that has come along with it.

Keywords:

Flat design, UX design-user experience, UI design-user window

Introduction

According to the traditional understanding, graphic design's primary purpose and artistic principle is an activity aimed at companies, organizations, and all users. In terms of scope, it is aimed at the majority. However, although the above concepts are used in principle at the current level, many innovative concepts are emerging, leading to a social need to enrich the basic concepts and include them in the curriculum.

Purpose

This article aims to study and identify innovative concepts related to the content of graphic design taught during the department.

Survey Methodology

To determine the characteristics of innovative concepts in graphic design that are different from traditional forms, the methodology is to observe the fundamental theories and the design works created by artists with innovative content and to study the programs of some professional universities and compare them with the current forms.

Research section

Considering the concept of graphic design in general, any company's logo, product packaging design, labels, and lettering can be understood as innovative solutions that meet the requirements of attractiveness and convenience for the ordering organization and users. Flat design in graphic design is called the "flat design method" because it does not produce three-dimensional elements, gradients and textures and uses

elements such as halftones and shadows. A flat style is a two-dimensional (flat) representation of objects. In flat design, objects are represented very simplified and stylized.

Figure 1. The basic forms of the plane model

The approach of visual communication design now defines the design of the graphic design plane. Regarding this approach, it is determined by the fact that it has been able to solve the most widely used consumer windows/tablets, bright screens, phones, laptops/solutions, and how it has been used in the style of minimalism, for example. Minimalism is a modern design trend used in all current genres, with simplicity and sharp edges to express perfect purity and create a pleasing design. Minimalistic style and flat design are inextricably linked as simple solutions are easily understood and cleanly defined without looking cluttered.

Another feature of flat design is that it uses the least number of elements to solve the basic structure of the design. Various light and shadow effects are used very sparingly. For example, mixed colours, gradients, and embosses. In some cases, skeuomorphism is opposed to the approach (skeuomorphism is a design principle in which natural elements are represented succinctly in a digital environment for various interfaces.).

Graphic design , flat design requires much sensitivity and a design solution based on much research; it has a rich design and meaning. At first glance, it seems to be a simple solution, but it is a design with a profound meaning, which contains the principles of wisdom, wisdom and symbolism.

Figure 2. Visual Communication Design Department, University of San Francisco

Students present their mobile apps, interfaces, and brand marketing maps created using the visual communication design approach.

Figure 3. Visual communication of Samsung's B2B brand marketing "IF news world awards"

In the new B2B brand marketing activities of Samsung, the flat design concept that uses visual communication elements expresses the positive attitude between people and technology that creates a link «Connect». B2B brand marketing consists of four basic design elements

It includes: a. Wide font, b. bright colors, c. balanced composition, d. from a simple graphical solution).

composed, in addition to innovative design solutions, it was able to demonstrate the concept of flat design. B2B brand marketing by developing a design concept with integrated solutions to use brand marketing more effectively.

1. Vision,
2. Cooperation,
3. Created three different visual styles that show successful results.

Nowadays, the flat model of graphic design helps the user to make an optimal choice by focusing on the meaning of the product, technology and content. The simplicity of flat design elements makes designers and user interface designers more responsive, pleasant and easy to use.

The above principles of flat design can be reflected in some group of graphic design topics, and it is shown as follows.

Graphic 1.

185

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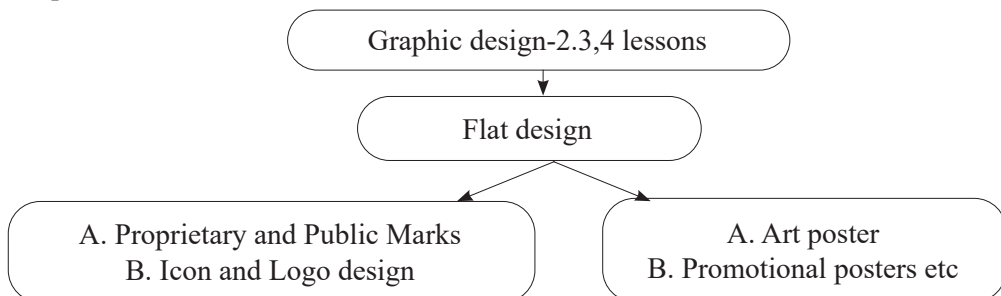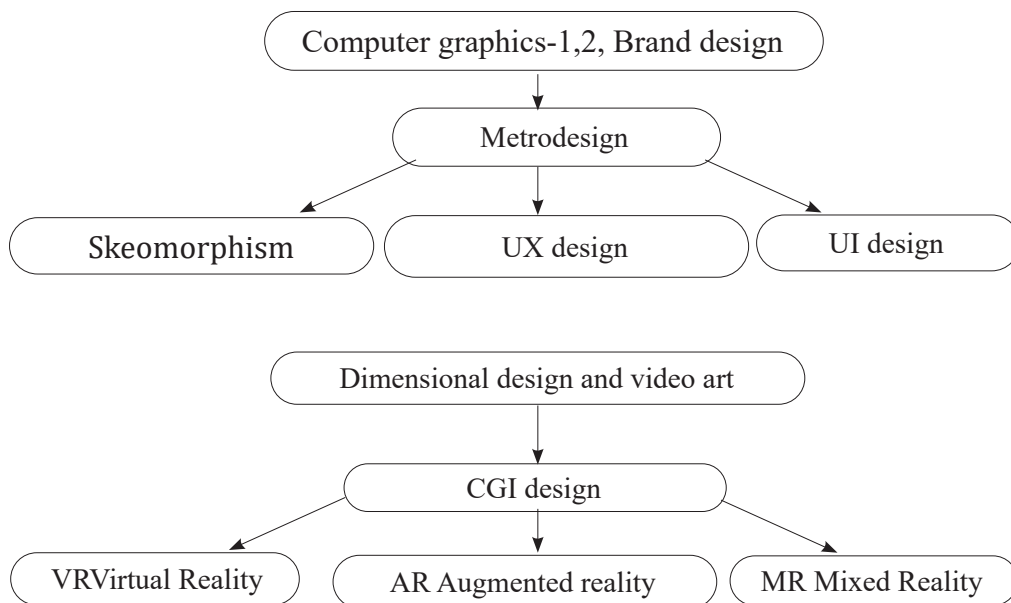
Conclusion

Due to the use of the electronic environment and intelligent technology, bringing new goods and services to society and implementing new marketing ideas, many innovative design principles and practical applications in the business environment are being created in a race against time.

Although there is a fixed traditional understanding of design as the main principle, the phenomenon of new styles and currents that evolve and change with a specific frequency is created due to many factors of social relations, for example, innovative technology, e-commerce, and epidemics.

The above demand and requirements can be encouraged to prepare graduate designers and design teachers who meet the market requirements by changing some concepts and principles in training by providing design education.

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PLAY/INQUIRY-BASED LEARNING
USING PENDULUM TOYS IN STEAM CLASSES

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Abstract

In Japan, there is a need to enhance scientific inquiry-based learning for children to recognize the significance and usefulness of learning science and to increase their interest in science. Therefore, we developed a wooden mechanical pendulum clock as teaching material for children to observe and explore, and balance toys and inverted pendulum toys as teaching materials for exploration. Workshops for elementary school students were conducted to clarify their educational value. The inverted pendulum toy rotates and swings as the tip of the rod bend and vibrates. The round bar connecting the model and the clothespin brings about the motion of the inverted pendulum after the clothespin is pushed. The toy rotates accordingly, and the feet and ears swing like a pendulum. Practices are evaluated using a four-factor method and an open-ended questionnaire with a set of questions about making things. In the free description section, the results indicated that activities involving emotion, wonder, and surprise, such as "the movement is unpredictable," led to an inquiring mind. These results indicate that children wonder about the movement of the inverted pendulum toy and deepen their spirit of inquiry through toy-making and play.

Keywords:

Making toy, Scientific inquiry activity, Pendulum

1. Introduction

Researchers worldwide warn that the 2020s could be the decade in which the future of humankind will come to the end of dystopia. The future of humanity will depend on how we deal with the many pressing issues that must be resolved on a global scale, such as climate change, in the coming decade. The demands placed on education in each country are great, and ESD education from early childhood has become indispensable, with the SDGs positioned as "the constitution for the international society of the 21st century".

The Central Council for Education[1] indicates that education should be conducted with a greater awareness of the connection between learning and society and that children should be able to discover issues on their own, explore them independently and collaboratively toward solutions, and apply them in practice.

In the study of the fifth grade of elementary school "Contents of the Study of Matter and Energy" [2] and the first field of junior high school "Conservation of mechanical energy in motion and energy" [3], "Pendulum motion" is covered. In addition, in upper secondary school, students study a single pendulum [4] as an example of an experiment related to mechanical energy. From these facts, it can be said that the motion of a pen-

dulum is taken up at all stages of elementary, junior high, and high school, and that pendulum motion is an important study topic.

Therefore, in this study, as a study of "pendulum motion," we develop and present a learning program using teaching materials for exploration through experiments and for exploration through making things and playing. The materials for exploration through experiments include exploratory activities to trace the principle of the pendulum and exploratory activities to understand how the clock ticks using a wooden mechanical pendulum clock as presentation material. As for materials to be explored through making and playing, we have developed toy-making materials that can be made by children and students through their exploration[5)~8)], focusing on moving toy-making materials that are expected to increase interest in making and deepen scientific learning in the process of exploration. The developed materials are designed to enable children and students to explore and make their toys. The developed manufacturing teaching materials include activities in which learners make and play by themselves and include the developmental content of pendulums, accompanied by a sense of realization about the application of pendulums. In addition, using the developed learning program, we will conduct practice for upper elementary school students to clarify the educational value of this teaching material.

2. Development of s of a learning program for pendulum motion

We develop a learning program for a pendulum motion. In previous classes, the weight of the weight, the length of the pendulum, and the swing width of the pendulum were focused on, and children explored one second pendulum period, determined the variables of a pendulum. This one-second exploration will lead to the field of study in high school science. In the KEIRINKAN Teacher's Manual for grade 5[9)], the inverted pendulum, spring pendulum, torsion pendulum, and solid pendulum are also introduced (*Figure 1*).

Figure 1. Examples of pendulums introduced in the KEIRINKAN teacher's manual for 5th grade[10)]
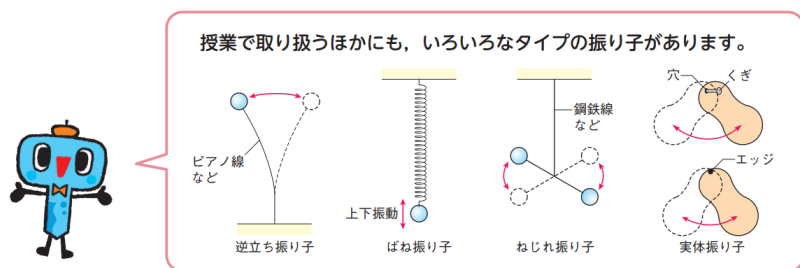
In the learning program developed in this study, Galileo Galilei's discovery of isochronism is emphasized as an introduction to realizing Galileo's greatness. Next, metronomes and mechanical pendulum clocks that put the pendulum to practical use will be introduced. A mechanical pendulum clock controls the escapement by the isochronism of the pendulum, and is composed of four parts: an escapement mechanism with an ankle and escape wheel, a pendulum as a regulating mechanism, and a weight

as a power source. The students will realize that the isochronism of the pendulum, which is the subject of their study, is useful as a daily commodity in daily life as a clock that ticks and keeps time by using an escapement mechanism.

Next, they explore one second and understand the nature of pendulum motion through experiments. Finally, the students will make a toy using the properties of the pendulum.

The authors have developed several types of toy-making teaching materials for teachers to choose from when dealing with pendulum motion in class, considering the actual conditions of the class and what they want the students to learn (*Figure 2*). This time, the authors newly developed an inverted pendulum model teaching material that includes the elements of an inverted pendulum and a double pendulum.

Figure 2: Developed toys as teaching materials for making

(*a*) *R: Rigid pendulum robot toy*[5]

(*b*) *L: Rigid pendulum bird toy*[5]

(*c*) *R: Double pendulum Toy*[6]

(*d*) *L: Pendulum and inverted pendulum Toy*[7]

(*e*) *Inverted pendulum toy*[8]

(*f*) *Inverted pendulum : passive walking toy*[9]

3. Development of the inverted pendulum toy

The inverted pendulum model teaching material has the properties of an inverted pendulum and a double pendulum. The parts of the developed inverted pendulum model are shown in *Figures 3* and *Figures 4*. The process of production and the use of tools can be selected according to the developmental stage of the learners. 15th International Scientific Conference Globalization and Its Socio-Economic Consequences

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When the lever of the clothespin is closed, the model rotates 180 degrees around the yaw axis due to the weight of the head. At this time, the legs attached to the main body of the model oscillate around the Pitch axis, and the whole model oscillates back and forth, left and right.

The head is fixed to the body with a round bar as the neck, and the legs and ears are attached to the axis of a bamboo ladder in a swinging state, which is fixed with a retaining ring hollowed out of the center of the round bar. Most of the parts are rectangular in shape and removable, allowing for easy modification of parameters such as the length and thickness of the legs and body, and exploration of movement. The central axis of rotation supporting the toy is made of TAMIYA Fun Craft Series plastic round rod (styrene resin) with a diameter of 2 mm. A wooden clothespin was used as the base to fix the central axis of rotation. A plastic round rod of 120 mm in length was used for the model to make the model compact, portable, and capable of transmitting vibration without directly touching the round rod.

3.1 Movement of the model

The axis of rotation of the model is shown in *Figure 5* and the movement of the model is shown in *Figure 6*. The model rotates around the yaw axis due to the weight of the head while swaying back and forth, left and right with the deflection of the supporting round bar. At this time, the legs and ears attached to the main body of the model sway around the pitch axis.

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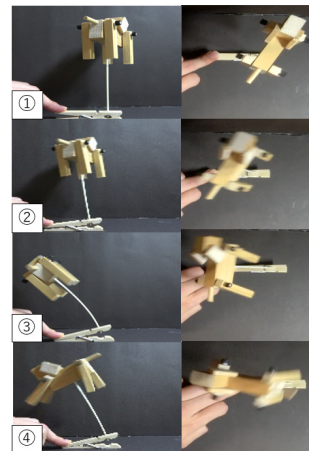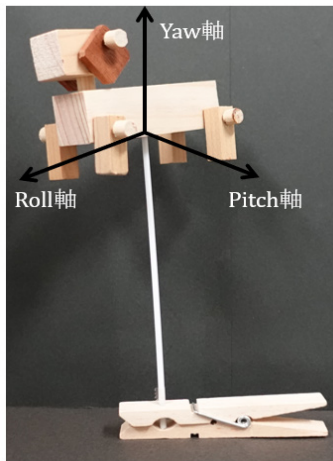
Figure 5: Models that produce rotation and oscillation
Figure 6: Movement of the model moved by opening and closing the clothespins
(Left: View from the front, Right: View from above)

3.2   Motion Analysis

Because it is difficult to conduct a reproducible experiment on a model that moves by opening and closing motions using a clothespin, we experimented using a model that moves by giving initial deflection with a fixed base. Experiments on the position of the center of gravity and rotational motion of the model body were conducted, and it was clarified that the model rotates when the center of gravity and the direction of deflection are not coincident. In order to clarify the principle of operation of the inverted pendulum model, we will conduct an experiment in which the direction of deflection and the center of gravity are misaligned, which causes the model to rotate. To analyze the data obtained from the experiment using only the body of the model. The time variation of the amount of deflection of the round bar and the amount of rotation of the model are shown in *Figure 7*.

The restoring force of the round bar at the maximum deflection is shown by a straight arrow, the moment due to the restoring force is shown by a curved arrow, and the motion of the model is shown in *Figure 8*. The moments when the maximum or zero deflection is reached are defined by Step 1 through Step 5, and the states of the model and the round bar at each step and the movements between each step are shown below.

Step 1: In the initial state, the round bar deflects to the maximum and the restoring force is at its maximum value. The model's center of gravity is located farthest from the direction of deflection of the round bar. Both the rod and the model are at rest.

Immediately after the start of motion, the deflection of the round bar decreases with gradual acceleration due to restoring force. At this time, since the model's center of gravity is located at the farthest point from the straight line along which the round bar is moving, a moment is generated around the center of gravity, and the model begins to rotate clockwise. After that, the rotation of the model maintains an almost constant angular velocity.

Step 2: In this moment, the deflection of the round bar becomes zero and the restoring force becomes zero.

The deflection and restoring force of the round bar become zero, and the motion continues. The deflection is opposite to the direction generated in Step 2 from Step 1 and gradually becomes larger. The speed decreases as the restoring force in the opposite direction of the speed gradually increase. The model continues to rotate clockwise.

Step 3: In this moment, the deflection of the round bar reaches its maximum in the direction opposite to the initial state.

After this, the motion between Step 1 and Step 3 is repeated, and due to friction, air resistance, deformation, etc., the shaking of the round bar and the rotation of the model gradually decrease and converge.

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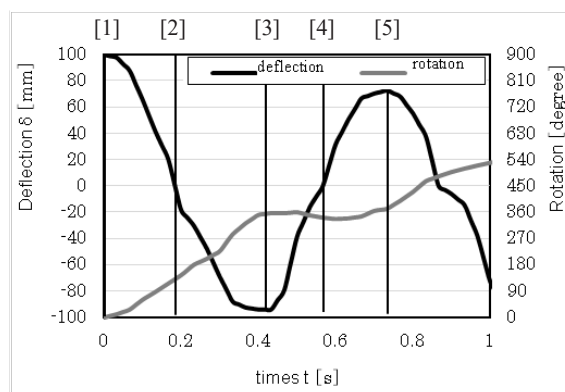

Figure 7: Time variation of the amount of deflection of the round bar and the amount of rotation of the model
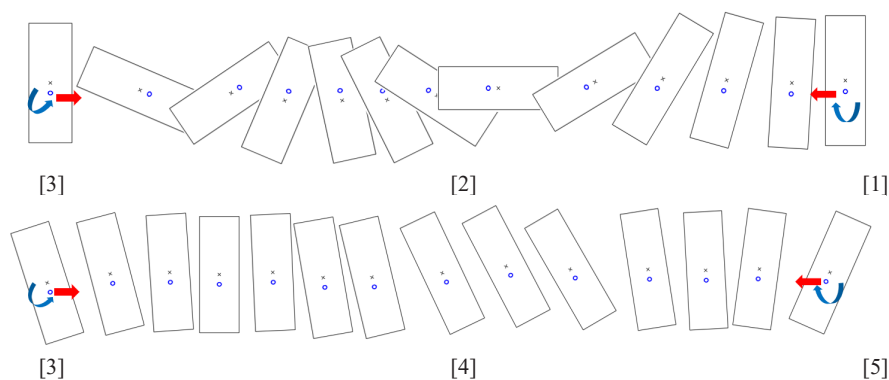
Figure 8: Left-right sway and rotation of the model (*Upper row: Movement of Step 1 to 3, Lower row: Movement of Step 3 to 5*)

In *Figure 8*, it can be seen that the slope (angular velocity) of rotation changes significantly near Steps 1, 3, and 5, where the deflection reaches its maximum. This is due to the effect of the maximum restoring force of the round bar and the moment caused by the eccentricity. The angular velocity is almost constant from Step 1 to Step 3 and from Step 3 to Step 5. It can be inferred that the moment due to the restoring force of the round bar is hardly acting.

4. Classroom practice using the developed learning program

We develop a learning program for upper elementary school students to learn pendulum motion through exploration. The lecture is designed to include experiment, production, and exploration. In the experiment, students change the length of the pendulum and search for one second. They make two types of rigid pendulum toys, one of which is a Christmas present for a loved one, and the other is an inverted pendulum toy with novelty. The intention is to generate conversation at home. The learning flow is shown in *Table 1*.

Table 1: Learning Flow

1st Day Nov. 21, 2021 14:00-16:00	[1]	Isochronism of pendulum
	[2]	Mechanical pendulum clock and pendulum toy
	[3]	Let's find one second!
	[4]	Let's make a pendulum toy! (*Figure 2 (a)*)
2nd Day Dec. 19, 2021 14:00-16:00	[5]	History of mechanical pendulum clocks and mechanical wristwatches, and inverted pendulum toys
	[6]	Let's make a Christmas present for your loved one! (*Figure 2 (b)*)
	[7]	Let's make an inverted pendulum model for yourself! (*Figure 3*)

The worksheets used in the practice are designed for elementary school students by the study shown above. The worksheets used in the practice are filled in by the students as needed practice. In the evaluation of the practice, questions related to manufacturing are set and a free-write questionnaire is administered. The following is an overview of this practice.

Lecture series: "The Earth is a Sundial" (6 parts)

Theme of this practice: Mechanical pendulum clock

Place: Edogawa Children's Miraikan

Target: 9 upper elementary school students

Worksheet Analysis of Practice: The worksheets on the first day were classified into four categories: "Galileo Galilei," "Making a pendulum toy," "Knowledge of pendulums," and "Automata," and analyzed by the content of the descriptions for each study. In addition, the interest words were extracted from the descriptions and derived the explanatory concepts and construct concepts. The worksheet descriptions and analyses are shown in *Table 2*. The children's emerging feelings of respect for "Galileo Galilei" and their understanding and delight in the knowledge of the pendulum indicate that they were surprised and pleased with the content and experience of the learning program developed.

Questionnaire Analysis of the Practice: *Table 3* shows the descriptions, interest words, and analysis of the questionnaire of the first day's practice. The results of the analysis show that taking home toys created by children can induce rich activities and feelings among family members and that these activities and feelings can be sustained when the toys are displayed with care.

The worksheets and questionnaires of the second day are analyzed. In the children's evaluation for the practice, we set up questions related to making and administered a questionnaire with a four-points scale and free-response questions. *Figure 9* shows the children's making of toy, and writting on the worksheet. The questionnaire shown in *Table 4* was answered by seven children who participated in the practice, and the results of the four-points scale's questionnaire are shown in *Figure 10*.

Figure 9: Children's manufacturing

Positive responses were obtained from all the participants in questions (1) and (2). In the answers, there were "The movements were unpredictable", "There were many strange movements that I didn't understand", and "I wondered why the robot also moved in deflection, vibration, and rotation even though I only pushed it". It was found that the children felt the wonder of complex motion by the combination of deflection, vibration, rotation, and oscillation.

The following is the analysis of the children's exploration based on the free descriptions in the questionnaire and worksheets. In worksheet item 1), there were answers such as "Why does it rotate even though it is moving left and right when I move it? ". This indicates that the children noticed the linkage between the round bar's bending and the toy's rotation, and thought about the mechanism and principle of operation. In the description of worksheet item 3), the answer was "It is oriented at 90 degrees to the side (to the clothespin) ".

The children responded, "I do it vigorously (push the lever of the clothespin and release it) when I turn it a little to the side", indicating that they have noticed that the positional relationship between the orientation of the toy and the direction of deflection of the round bar affects the movement. This exploration is consistent with what we have clarified in this study. These findings suggest that children were aware of the movement of models through toy making and playing, and they questioned the movement of the models and deepened their exploration.

The toys created by the children were brought back home to their families, and this induced rich activities and emotions among family members through the toys. The toys were displayed with care, and this may continue. The children's ideas may lead to family activities of trying, failing, advising, and completing improvements. In the practice of the inverted pendulum model for elementary school students, it was found that the children were amazed by the complex motion of the model, which is a combination of deflection vibration, rotation, and oscillation. They also noticed and explored the influence of the direction of the model and the positional relationship of the round bar supporting the model on the direction of deflection.

5. Conclusion

We developed a mechanical pendulum clock as a presentation material for observing and exploring the motion of a pendulum in the fifth grade of elementary school science, an experiment to investigate one second by adjusting the length of a string, and the teaching materials for making to explore the motion of a pendulum. We analyzed the children's worksheets and questionnaires to clarify the educational value of the material.

Children were aware of the movement of models through toy making and playing, and they questioned the movement of the models and deepened their exploration. The toys created by the children were brought back home to their families, and this induced rich activities and emotions among family members through the toys. The toys were displayed with care, and this may continue. The children's ideas may lead to family activities of trying, failing, advising, and completing improvements.

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DEVELOPMENT TRENDS OF ECO-DESIGN

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Abstract

Humanity's problem is to develop a method for the proper use of natural resources based on the concept of sustainable development. Eco-design focuses on issues related to industrial and environmental degradation and over-consumption. It is also a design direction that aims to develop technological solutions with environmentally friendly materials and low energy consumption.

John Button 1998 identified the need to incorporate environmental considerations into product design and the importance of carefully considering eco-design practices in manufacturing systems (McAloone, Bey, 2009, p.46). The concept of eco-design is based on conservationism and is a way of protecting biodiversity, natural resources and the environment through controlled and sustainable development. In addition, while the goals of introducing eco-design to the broader industry are set, ways of presenting it to the market are still being studied (Radlovic, 2014, p.14).

Keywords:

Nomads, Tradition, Applied art, Sustainable development.

Introduction

Although the field of eco-design is developing to reduce the negative impacts of the inappropriate use of natural resources, it is observed that the empirical knowledge of implementation and production practices has yet to be formed. The social and ecological principles of eco-design were considered by designers such as William Morris at the end of the 19th century and Frank Lloyd Wright at the beginning of the 20th century. Product design began to reflect them (Dewberry, Emma L, 1996, p.685). In her work, Emma Dewberry defines eco-design as «a design that considers the environmental impact of a product throughout its life without compromising performance, quality, cost, or appearance» (Dewberry, Goggin, 1995).

Several eco-design tools are used in new product development. It includes qualitative and quantitative methodologies and relies on manuals, checklists, matrices, and software. Online platforms used to produce eco-products reduce the problem between the designer and the customer. Researchers Baumann, Bigget, Hochchorner, Bovea, Pirez-Belis, Hernández Pardo and others have actively conducted empirical research on eco-design development, creating up to 150 tools. Among the many methods available, LCA is the most comprehensive method for measuring product market turnover (M.D. Bovea, 2016, p. 61-71).

(LCA) which is a tool for assessing the environmental impact of all stages of a product's market cycle. For example, the ecological impact of a product is evaluated from raw material extraction, processing, production, distribution, use, recycling, and disposal. (LCA) studies provide a detailed estimate of the energy and materials

required throughout the product's production value chain. Potential environmental impacts are assessed. According to scientists, «Sustainable consumption is directly related to natural resources, and sustainable production is defined as producing products using natural resources and recycling waste according to the market cycle. «Environmental problems are considered to be located between production and consumption» (Charter and Tischner, 2001, p.32).

Scientists have unanimously agreed that (LCA) should be a priority in eco-design to efficiently use and produce natural resources and energy sources (Papanek V, 1993).

«Environmental effect analysis» is a product development method determining environmental impact. Often used in the design development phase, these can be considered the economic and technical aspects of the production. During the presentation, impact data will be collected during the product development phase. After that, the cycle from production to disposal of the product is calculated and evaluated. After completing the environmental monitoring, it is necessary to repeat the monitoring analysis to ensure that the intended changes and results are achieved. Finally, the information is summarised and explained.

Main Text

As environmental awareness increased, the «clean production» approach, or pollution prevention, aimed at preventing waste and using energy and materials more efficiently, began (Roy, 2006, p.145). Since then, activities focused on solving environmental problems have increasingly moved to the product development stage (Brezet and Van Hemel, 1997, p.43).

Raising awareness of eco-design in the business sector is crucial in promoting sustainable development. Eco-design products have a growing market share and seek opportunities to create zero waste.

Eco-design is following nature, producing, using, and disposing according to the natural ecosystem. It provides many possibilities, such as becoming another product, decomposing in nature, and creating functional new materials. Also, the traditional materials and technologies used by the people for centuries have become a field that must be studied in the context of eco-design.

Three eco-design certificates certify sustainable products on the market:

These include Cradle to Cradle (C2C): this system ensures sustainable product innovation in five key performance categories: health, material reuse, renewable energy and carbon management, water management and social justice.

ISO 14062: An international standard that assesses the integration of environmental impacts in industrial design development.

ISO 14001: This standard enables companies to protect the environment through their operations. Nowadays, design is not only viewed from the point of view of production and use but also from the point of view of theory, policy, and social program from the point of view of systems (Yagou, 2005, p. 58).

This perspective has excellent value in increasing creativity and creating new knowledge by allowing us to recognise that design is not just a product but a broader context (Friis, 2014, p.239-255).

It cannot be denied that humans have actively implemented eco-design in history.

Researchers in the field of eco-design are focusing on traditional practices of

applied art.

The study of traditional applied arts positively affects the diversification of design methods. At the same time, a lot of work is being done to harmonise traditional crafting methods with modern technology and marketing structures (Wong, Wendy, 2011, p.375-395).

Factories limit the market for handicrafts by mass-producing goods. However, some customers may prefer something else depending on how the factory operates or how it is designed for mass production. There are examples of craftsman using eco-friendly materials and preserving their traditions by serving products that meet the demands of their customers.

In addition, traditional handicrafts are becoming a prominent academic topic these days. Studying traditional crafting methods is necessary (Ingold, 2011, p. 21).

In his research, Russian scientist A.U. Leonidovo said, «To clarify the unique characteristics of a nation, it is necessary to carefully study the psychology, spiritual aspects, historical experience, and adaptation to the people's natural environment.

The unique features of traditional culture and art are defined as a basis of modern design (Leonidovo, 2009, p. 12). And M. Yu. In his work, Ilyinichna studied the reflection of the features of traditional decorative art in modern design works and put forward the idea of «unique design» based on the interconnected principle of craft, craftsman, and designer (Ilyinichna, 2012, p. 2).

In his article, researcher Wu Qing argued that the relationship between traditional Chinese culture and modern design combines conventional cultural elements with advanced technology (Qing, 2015, p.32-39).

Designer E. Sotsase has defined that Japanese designers absorb forms representing traditional patterns when designing products, and classic art has found its place in modern design (Komina, Bokareva, 2017, p.12-21). Examples of traditional Japanese paper crafting methods used in contemporary product design and Scandinavian countries' applied art traditions have become the basis for national renaissance in modern times (Leonidovo, 2009, p. 12). For example, the product design of the «IKEA» brand has preserved its traditional style, and minimal design has become worldwide.

Conclusion

Eco-design is a necessary way to cultivate the culture of consumption in our daily lives, to be friendly to the environment, and to implement the basic principles of sustainable development. According to the researchers' conclusions, the traditional applied arts of all nations contain values. A tradition of craftsmanship tested and perfected over the centuries is indispensable for improving modern product design. Classic applied art includes sustainable development to a certain extent in the content of any world civilisation.

The main factors connected with the eco-design of Mongolian nomads' consumer art are nomadic farming, traditional methods of harmony with nature, religion, and the characteristics of the artistic mindset. In addition, the rich practices of mobile consumer arts and household production are compatible with eco-design principles.

Each country must develop based on its traditions for the implementation of eco-design.

According to researchers and designers, the central pillar of eco-design is devel-

oping marketable product design according to natural laws to explore the possibility of producing the product with locally sourced materials.

The characteristics of Mongolian nomadic art-making methods are essential in shaping modern eco-design patterns. One way for Mongolian nomads to preserve and spread their traditions is by contributing to eco-design development based on the experience of redesigning and crafting traditional art objects.

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EXISTING PROBLEMS IN TRADITIONAL MONGOLIAN SCRIPT EDUCATION

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Abstract

In the rapid development of information technology era, a variety of characters are widely used in the network environment. However, as a treasure of the Mongolian people from generation to generation, the traditional Mongolian language has developed slowly in this environment. This paper aims to find out the reasons for the slow development of traditional Mongolian script in the network, analyze the problems existing in Mongolian education, discuss the aspects of cultural treasures, morals, beliefs, etc., and put forward the method of using informal education to promote traditional Mongolian script using in the network environment.

Key words:

Network environment, Traditional Mongolian, Cultural treasure, Morals, Beliefs

Introduction

Scripts is an important part of human culture and a major force for development. After a long time of human hard work crystallized wisdom to have the present scripts. From ancient stone paintings to stone tablets carved on porcelain to modern scripts do not know how many ups and downs have gone through. Once any kind of script appears, it must become the spiritual pillar of the nation that uses such scripts. (сүн-шуван, 2019)

The Mongolian people are also a great people who have created their own unique scripts through a long history. Over the years, Mongolians have used traditional Mongolian, Vagindra script, Galik script, Clear Script, Phags-pa script, Soyombo script, Latin script, Cyrillic and many other scripts. The oldest of these, traditional Mongolian, is the most successful script still in widespread use today. (Википедиа, 2023)

Due to various reasons, as a symbol of the traditional psychology and spirit of the Mongolian people, the use and inheritance of traditional Mongolian is not satisfactory. For this reason, we should pay attention to this subject. In order to highlight the main problems, two practical cases are illustrated here.

Case 1

In 2019, the official website of Minzu University of China released a news that the language and script used by Mongolians living in Inner Mongolia were conveyed by the United Nations as a «notice of danger» and listed as endangered. The news comes as at least 1,255,000 (according to incomplete statistics) Mongolian speakers have lost their native language in some areas of Inner Mongolia in recent years, and it continues to deteriorate. Some experts speculate that in the next 100 years, the traditional Mongolian script will disappear completely from the region. (MinzuUniversityofChina, 2019).

Some people think that the 70 years of ethnic education in Inner Mongolia has made brilliant achievements. (togos, 2019. 6) However, from the above cases, it is not difficult to see that there are still some shortcomings behind the «brilliant achievements».

Case 2

From May 2022 to September 2023, more than 20 wechat groups with nearly 6,000 users were established one after another, mainly for traditional Mongolian typing practice in the network environment. According to the daily typing practice data, participants accounted for about 21% of the total population at most. Among the 21% of active participants, the age of farmers and herders is generally over 40 years old and the education level is not high, and the highest age of participants is over 90 years old. It is strange how few young people, especially college students, use traditional Mongolian in the Internet environment.

From the above two cases, it is not difficult to see that the situation of Mongolian people living in the Inner Mongolia Autonomous Region losing their mother tongue and their script is very serious, and those who can use traditional Mongolian script actively use their own script in the Internet environment are like «stars in the daytime».

For those who already have their own unique language, does this situation indicate that there is an unimaginable «error» in the education of the people? What kind of education can human beings receive to not cherish the precious wealth of their own nation and their own mother tongue and script?

What is lacking in our education

In order to find the answers to the above questions, we should carefully consider some of today's educational problems.

About «education» on Wikipedia, 180 countries and regions related explanations. Let's take a brief look at how Mongolia and China interpret «education».

Mongolian interpretation of «education» - is the synthesis of individual education and training, is acquired knowledge, skills, *habits, values*, operational knowledge and experience.

As a member of the society, the combination of knowledge, *belief*, art, *morality and habits* acquired by people is called «culture». The tool that combines «culture» with the needs of society to pass on from generation to generation can be understood as «education». (Википедиа, боловсрол, 2023)

Throughout the above, the acquirer of «education» is not only the individual acquisition of knowledge and skills to serve the society, but also on this basis should have morality, beliefs, and the responsibility of inheriting cultural treasures.

Of course, there are many kinds of «cultural treasures», among which the most precious to the Mongolian people is the traditional Mongolian script. For thousands of years, Mongolian ancestors have passed on their cultural treasures in unique ways, adding glory to human civilization. This is «traditional Mongolian script».

Although Mongolian education bears the historical responsibility of preserving and inheriting cultural treasures, the situation of using traditional Mongolian is not optimistic in today's Mongolian people. For example, in the « The 12th international congress of mongolists» held in Ulaanbaatar, Mongolia on August 13, 2023, teach-

er G.Gerlmaa gave a speech on «Монголчуудын бичиг үсгийн чадвар, хандлагын нийгэм, хэл шинжлэлийн судалгаа» : «Most people think that traditional Mongolian is very useful, but do you use it every day? All the participants answered «never».»Do you agree to make it an official script?», «I can't write,» «I have no time,» and «meaningless» accounted for 90.3 percent of the answers. Although most Mongolians believe that traditional Mongolian is very useful, the number of people who use traditional Mongolian in real life is almost zero.

A majority of linguists do consider that language loss is an ethical problem, as they consider that most communities would prefer to maintain their languages if given a real choice. (Wikipedia, 2023) Then the loss of the script that records one's own language is also a ethical issue. As a cultural treasure of the Mongolian people, the traditional Mongolian script is not valued by the ethnic compatriots. To discuss this phenomenon in moral terms is to forget the appearance of ancestors? Just as it is a matter of moral character for a poor child to despise his parents, it must be a matter of moral character to neglect the cultural treasures passed down from his ancestors. The Great Mongolian Dictionary explains that «morality is a habit that people should follow and have.» So we replace this sentence with, «Is it the habit that every Mongolian should follow when using traditional Mongolian?» The answer to this question, I believe, must be certain from Mongolians who love moral character.

Morality is an important parameter that reflects people's nature and a tool that drives us to do right things in our daily lives. (Р.Дарьхүү, 2019) It is the nature of Mongolians to value cultural treasures above all. As Mongolian people pay attention to moral character, the extensive use of traditional Mongolian in daily life is also a fundamental embodiment of good moral character.

Mongolian people have great respect for their own script and regard traditional Mongolian script as «The script of eternal heaven». Because they have believed in «heaven» since ancient times, it is also reasonable to connect the most precious script with heaven as «The script of eternal heaven». With the intensification of globalization, do Mongolians still believe in «heaven» and Revere nature? The answer is no. Some online articles say that because the Mongolian people have abandoned the tradition of «believing in heaven» passed down for generations and do not live in harmony with nature, the living environment for humans and animals has been deteriorating, so that the poverty population has reached about 40%, becoming one of the underdeveloped regions in the world. (Нарандулам, 2018)

Facts have proved that we do not want to use and inherit our own excellent culture, but blindly apply others' things reluctantly is unable to achieve good results. So it is not nonsense for Mongolians to «believe» in their own traditional Mongolian script.

The content of Mongolian education covers morality, cultural treasures, beliefs and so on. No matter from which point of view, all sectors of Mongolian society should quickly and widely use traditional Mongolian script, especially in the network environment to promote the use is an urgent matter.

Traditional Mongolian script not only needs to be promoted and used in Mongolia, but also Mongolians in other countries or regions should actively use traditional Mongolian, especially Mongolians in Inner Mongolia who have inherited and used traditional Mongolian from generation to generation.

Although the people of Inner Mongolia (who have not lost their own language) have a tailor-made constitution of ethnic education, the difference between ethnic education and China's general education has been narrowing with the pace of The Times. So let's take a brief look at the concept of education in China.

Education usually has two concepts, broad and narrow. The broad sense of education generally refers to all the dissemination and learning of the ***achievements of human civilization,***(all kinds of knowledge, skills and social life experience) in order to promote individual socialization and social personalized social practice activities, produced in the initial stage of human society; Education in the narrow sense refers to school education, that is, institutionalized education. (Wikipedia, 2023)

The purpose of education in China: education must serve the socialist modernization, serve the people, must be combined with productive labor and social practice, to cultivate socialist builders and successors who are fully developed *morally*, intellectually, physically, aesthetically and labor. (Education-Law-of-the-PRC, 2021)

It is not difficult to see that China attaches great importance to moral education from its educational concept and purpose. In addition, there are also keywords such as serving the people, all-round development, personalized development and cultural inheritance.

Because Inner Mongolians and Han people have long depended on each other to coexist in an environment, in other words, the influence of the «big environment» encourages them to use Chinese proficiently. «Big environment» is the best Chinese teacher. Therefore, people, including children, have received Chinese culture education since childhood, which leads to various difficulties in learning to use their own mother tongue. In particular, in recent years, the vigorous promotion of the «popularization of the national common language» tide flowed down the originally depressed mother tongue education encountered unprecedented difficulties.

The difficulties that Inner Mongolians encounter in learning to use traditional Mongolian are by no means a valid reason to give up their cultural treasures. They should overcome all kinds of difficulties and find other ways to protect and pass on cultural treasures. Or develop new educational methods to break through the current difficulties.

Conclusion

Mongolians, or both iner and outer Mongolians, use their own educational system or educational ideas to get education. How do educated people pass on and promote their cultural treasures? We don't need any kind of research to find out. The large number of Inner Mongolians who have lost their native language, their current negative attitude towards the use of traditional Mongolian script, especially in the Internet environment, The recovery of traditional Mongolian script in outer Mongolia is too slowly, and the few traditional Mongolian script can be seen in the streets of Ulan Bator... All this is enough to see what is missing in our education.

Inner Mongolians must follow the Chinese education system. There is no possibility of changing the current education system in order to promote one's own cultural treasures. So is there really no way out? Is it difficult to pass on and protect the great wealth left to us by our ancestors only through formal education?

    People can learn for all life. People can study at school and they can study at home. What can't be learned in school today can be learned in all areas of society (e.g., the Internet). The most important thing is whether the person really wants to learn. We can use informal learning to achieve our goal only if we have the confidence, desire and consciousness to learn and use our own script.

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PROBLEMS OF DEVELOPING THE COMPREHENSIVE SKILLS OF STUDENTS AS OPERA SINGERS

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Abstract

In this report, we have selected topics to highlight the various types of singing and reciting methods of opera singers, to introduce them to their features, and to facilitate further training and skill development. It is a prejudice to think that a singer can only master the artistic way of expressing music with his voice alone. In addition to studying the culture of the stage, a singer must also acquire a high level of emotional education. For example: a singer is: personality, behavior in the crowd, thinking, visualizing, imagining, impersonation, ability to control, express and regulate emotions, attractive behavior, mastering emotional education, singing well, requires mastery of reading skills.

In other words, it is believed that the best singer should have the right moral development, the right communication attitude, and a high level of aesthetic education. The singer's singing ability can be considered in the following ways. Among them, it is important to learn recitative reading to represent the main character between arias, short Italian opera readings dry and chase readings, combined speaking and singing recitatives, communication readings, "white readings", "rap-style readings" and melodic readings of Chinese national opera. The form of "singing" in Chinese opera repertoire is directly related to the Chinese language, dialect, Chinese culture, Chinese opera, and the aesthetic habits of Chinese audiences. Because the rich meaning and variety of language in Chinese opera has many more interesting intonations than in Western languages, the recitative, which has a weak tone to "depict the psychology of the characters" in the opera, is unique in that it has its own role. Therefore, if anyone learning to become an opera singer can master all the necessary skills, their singing ability will surely improve.

Keywords:

The opera, Singing,Ccomplex competence, Recitative reading, Genres

Introduction

The history of human singing art is directly related to the science of singing. In particular, it is believed that the history of the art of opera singing began to be recorded in the Pre-Century period. It is considered in connection with the emergence of song poetry in the history of music of ancient Greece, Egypt and East Asia. For example: In ancient times, singing was folk and religious, so the art of teaching singing was didactic (from the Greek word διδακτικός (didacticós), which means «the art of teaching») and did not require training. People «naturally» sang spontaneously, it is said that the art of classical singing developed from the singing of prayer songs in temples in sim-

ple, low tones or choirs. Singing and melodious sounds are thought to predate modern human speech. But the singing form of opera art is said to have originated from ancient church hymns, which naturally includes Gregorian chants or (chorals[8]).

Picture #1. Pope Gregory I, also known as Saint Gregory in the Orthodox[9] tradition, lived from September 3, 590 to March 12, 604. (https://ru.wikipedia.org/wiki/, 2010).

The oldest form of opera singing is: Gregorian chant. It is (Latin "cantus Gregorianus"; English "Gregorian chant", French "chant grégorien", German "gregorianischer Gesang", Italian "canto gregoriano"). The Gregorian chant is: "cantus planus" or the choir of the Roman Catholic Church. The term «Gregorian hymn» derives from the Italian name of Gregory the Great (Pope 590-604), who was credited by later medieval tradition with authoring most of the chants of the Roman church. "The real purpose of the Gregorian chant was: to follow the liturgical activity of the church, and perhaps (antiphonal) - was limited to communion hymns. It is a Latin «antiphonale», «antiphonarium», [liber] antihonarius), a daily liturgical hymn[10] with texts for official Catholic services" (Agustoni L., 1992).

Picture   #2.   Manuscript   book   of   ancient   Gregorian   «choral»   psalms (http//ru.wikipedia.org, 2020).

The earliest form of opera singer was "Choral", which means: (Latin Chorale) choir. The chorale is a reverent choir that honors the deity of the temple. The Gregorian chant of Catholics is considered to be the same as the choir of the Orthodox Church.

Figure #3: One of the oldest manuscripts of Gregorian chant, Laon 239 (early 10th century). (https://ru.wikipedia.org/wiki/, 2019)

In general, chorale is: an ambiguous word (often referring to the four-part «choir» of the Lutheran Church, a multi-voiced choir. This Lutheran church has polyphonic singing, similar to the Protestant choir.

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[8]Хорал-нэн эртний сүмийн найрал дуу

[9]Үнэн алдартны шашин (Ортодокс) — христийн шашны гурван гол урсгал болох (католик, протестант, үнэн алдартан шашны) урсгалын нэг юм.

[10]

Sheet music examples #1,2, Early Orthodox church choir sheet music. (https://ru.wikipedia.org/wiki/, 2020)

"Gregorian hymns were originally monophonic, but in the course of historical development, they were arranged to be sung by many voices in the church, and developed more precisely since the Renaissance". The basis of the Gregorian chant language is Latin. Some songs were written in Greek. The Catholic hymnal consists of about 300 psalms, called the «Trident» (Dies irae). (The study of medieval chant, /2001/.)

Picture #4. (St. Gallen Ms. 390/391, 990-1000).
Saint Gall presents a small lantern to monk Gallen Hartkert. (Massenkeil.G., 2010). At the top or bottom of the picture: there are verses reminding him of his invulnerability. For example:

Auferat hunc librum nullus hinc omne per aevum
Cum Gallo partem quisquis habere vult
Istic perdurans liber hic consistat in aevum
Praemia patranti sint ut in arce poli" (Agustoni L., Einführung in die Interpretation des gregorianischen Chorals. , 1992.).

Gregorian chants are mostly prayers in text. The text is rhymed, consisting of free rhythms and nuances of the song, slight lengthening or shortening of the duration, or intervals of varying sizes between parts of the lightly accented «prayer». Therefore, the art of the opera singer is believed to have originated not only in medieval renaissance hymns, but even in ancient times. In this article, we have addressed the issue of developing the comprehensive skills of singers.

Survey Methodology:
The purpose of the study: to clarify the problem of developing students' complex reciting skills by clarifying the methods of reciting various types of opera, not only singing well.

Objective:
• Design questionnaires and collect data according to the objectives.
• Clarify and analyze the types of reciting of opera singers,

Methodology:
The method of comparison and comparison was used to develop the comprehen-

sive abilities of opera singers in singing, thinking, imagining, managing, regulating, and expressing emotions, learning from various types of opera recitative reading, and clarifying the types of opera reading. Also, the research was conducted and analyzed using quantitative methods.

Main section-1
Developing comprehensive skills of students as singer professionals

It is a prejudice to think that a singer can only master the artistic way of expressing music with his voice alone. In addition to studying the culture of the stage, a singer must also acquire a high level of emotional education. For example: a singer is: personality, behavior in the crowd, thinking, visualization, imagination, character transformation, the ability to express and regulate emotions, express attractive behavior, acquire emotional education, and sing well. requires possession. In other words, students are expected to possess: the ethics, proper communication, attitude, and aesthetic qualities that a great singer should possess. Everyone can sing. So why do some people sing the same song dryly and stiffly? Why is it that some are extraordinarily attractive and beautiful, and make the world excitingly beautiful? Of course, it is checked by the mastery of singers' emotional education, personal culture, relationships, character, etc. For example, in the areas where the ancient Chinese tea culture spread, people often developed the palace harp, piano, calligraphy, painting, poetry, song, dance, Shii drama, chess, magic, and circus performances. But the best art of Western singing is: «Bel Canto» or «beautiful singing». Mental education is important for the development of the singer's comprehensive abilities.

Developing a singer's behavioral relationship

Being a singer is often thought of as lovingly developing your voice, but it's actually important to develop your personality gracefully. The person who has the highest level of civility, courtesy, and personal culture is liked by many. For example: from the singers of ancient Chinese Shii dramas: In addition to singing beautifully like Ying Xiumei, graceful like Yaa Hong, majestically beautiful like Zheng Yong, sweet, funny and wonderful like Wang Xia, people appreciate it if they have high communication skills. In particular, anger and petulance in relationships are frowned upon as feeling gross and dark or suffocating. Even if a singer has a beautiful voice, singing without emotion can bore the listener. Therefore, it is important to pay attention to the development of politeness, since it is believed that the most basic issue is communication.

Developing the skills of expressing your emotions

It is believed that a singer should: first of all, understand the character and image meaning of his song, and express his mood and voice in addition to learning the ability to express emotions in accordance with the character. For example, the main character of Carmen in the opera «Carmen» (卡 门 ka r men) by George Bizet is a beautiful gypsy girl who yearns for freedom, loves life, and expresses her emotions boldly. Only that character is believed to be capable of portraying «three-dimensional emotions» such as hatred, unpredictable behavior of people, and the character of a defeated woman. Therefore, if you sing a song without any emotion, it will turn out to be like

reading a dry note. Therefore, the distribution of emotions is one of the most important skills for a singer to master.

Developing imagination and acting literacy

Although the imagination of the character requires the singer's mental imagery, it is also important to develop acting skills. In the Chinese film «Dream of the Red Mansion» 《红楼梦 (hong lou meng), the song of love between a young master and a beloved girl is sung. Therefore, it is important to master the method of acting and singing, when creating characters with imagination when singing expressively with emotions. In this way, the expression of the singer's character will be perfect. For example: «zai shui i fan» is considered the best song sung by singer Teresa Teng. In that song: the singer floats on the water in the fog, traveling through time and space, the life beauty from the distant past to the ages, is always in the water, smiling faintly, attracting people. When singing: 美声（mei sheng）In addition to mastering Bel Canto skills, it is important to sing imaginatively. In addition, it is important to understand the character of the song and use your imagination to sing it in combination with your emotions.

Developing the right position of attractive behavior

In addition to expressing the character of the main and other characters of the work, the singers are influenced by the character of the individual himself. But there is one skill that must be mastered: the highest level of kindness and good manners. 张国荣（zhang guo rong）Leslie Cheung sings the Cantonese "wind continues" 风手机吹（feng ji xu chui）with a sharp and harsh tone, which is written in a low and soft tone. This style is not flamboyant or pompous, but skillfully conveys the loneliness that flows quietly in the depths of his soul. Even the cry of an ugly character requires beauty in character traits. The singers on the stage do not cry, but the listeners fall in love with their songs. Good singers sing with unusual emotion to express behavior.

Development of short recitative reading

Recitative short recitations: recitations between arias, close to dramatic recitations but accompanied by music or speech, recitations between arias, often focusing on character monologues and dialogues.

A short recitative reading from an italian opera

The Italian operatic form of singing includes chanting with recitation. Primarily used in 18th-century opera, this recitative is a short reading between two arias. An example of such an opera is Georg Friedrich Handel's opera «Rinaldo». Rinaldo (Ital. Rinaldo; HWV 7a) is an opera in three acts written in Italian. The album was written by Giacomo Rossi and is said to be based on Torquato Tasso's epic «Jerusalem». After 1731, the opera was not staged until the 20th century.

Picture No. 5. Handel. In 1716, Recitative was developed and later used in /comic/ comic operas, with the difference that the latter was expanded in paragraphs and accelerated rhythmically.

In addition to simple recitation, it refers to recitation without a long dry accent that indicates a conversational state. Dry recitatives in comic operas are usually monosyllabic, when sung by a single voice: the light and heavy accents of the lyrics are accentuated, and the singing speed is somewhat free.

Procedure recitative reading

Pursuit recitative is a form of recitative recitative in the form of a chant followed by a group reciting one another's recitations in the form of a canon. Compared to earlier dry recitative recitatives, it is characterized by a greater expressiveness of emotional color, and musically it moves from a single voice to multiple voices. For example, in the second act of 弄臣（nong chen）Rigoletto, when Rigoletto is afraid of God's curse, he recites: «The old man's curse must not be forgotten» in the recitative form of recitation. *Music sheet #3*. opera *Rigoletto,*

Combination of speaking and singing recitative reading

This type of reading generally has no separate paragraphs and is spread over the aria represented by Puccini (see, for example, «Sunny Day»). In singing, emphasis is placed on the intonation and diction of the words, and the quality of singing varies between spoken narration and lyrical singing. As if speaking but not speaking, singing but not singing. As the aria approaches the stanza, the melody gradually intensifies and the aria connects seamlessly.

Communication recitative reading

The relational recitative, which is more common in romantic operas, puts the situation of the opera characters into a tense form. This communication reading is based on symphony orchestra melody, the main form is «dialogue», and in terms of singing ability, the singer must carefully control the rhythm, speed, special requirements of singing, and aria. The lyrics are stronger when sung. For example, Gounod's 《浮士德(fu shi de)《Faust》《Jewelry之歌》（zhu bao zhi ge）"Jewel Song" aria

Music sheet #4. Margaret's reading in: «Now I must continue to dress, I will adorn myself again with this chain and bracelet,» but here the aria and recitative are not only always combined like twin brothers, but also create an organic unity of character relationships" (Марко, 1954).

Chinese national opera recitative reading

Chinese opera recitative singing is a bit more complicated than the various forms and styles of Italian opera recitative due to the richness of Chinese phonetic pronunciation /one word can be changed into 4 phonemes/.

Development of "white reading" skills of chinese opera

In Chinese opera, «white reading» or «plain reading» is the main form of expression, especially in the early singing mode of the opera. For example, the «white

reading» is mainly the introduction of the plot and the conclusion of the dialogue between the characters, which is the most important part of all Chinese opera literature. The first Chinese opera: 白毛女（bai mao nv）developed recitative in «White Haired Girl». The main function of the white reading is that it is read in connection with emotions when the dialogue between the characters and the internal conflicts of the characters are more intense. *Note example #5. Sheet music for Mu Renji's short song «Hebei Taiping»* (И., 2006). Ma Ke said: "Due to the characteristics of the Chinese language, one suffix and the difference between the four dialects, Chinese opera melodies have their own special rules. There is no problem in Western opera, but there is in national opera. The main feature of reciting in the example above shows how the speaker's rhythm and expressiveness have developed" . The tone of the voice is quite similar to the tone of speech, but has a musical rhythm. This is the main feature of learning operatic reading.

Developing rap reading

Opera rhythms have their own many forms of singing and singing. Although arias and romances are predominant, there is still a clear line between arias and literature in Chinese opera recitals, which indicate the style of dialogue drama. Opera is full of recitative readings in various forms and styles. Among them, the melodic style often evokes the many voices and special rhythms of a symphony orchestra. Rap-style rhythms and chants also influenced operatic recitatives. This form, which sounds like speaking and singing, is not the main thing of singing, but speaking is more important. 虎子（hu xi） Huzi, 白傻子（bai sha zi） The characteristics of classical poetry readings such as the dialogue between Bai and the fool: «Music melody» rather than relying on the rhythm of the poem's language" (Кизхан., 1988).

Developing reading fluency

Anyone who is studying to become an opera singer should first learn to recite a poem to the tune of the urn. Especially in the art of opera, there are different types of reading, and if you do not learn and master them carefully, it is important to try to learn to read in urn first when learning from dry white reading, melodious and musical reading, spoken and spoken reading, and combined reading of poems. In the history of Chinese opera singers, the transition from «white reading» to «lyrical reading» was a big leap in solving the national character literature. First: an opera singer can definitely improve his reading ability by learning «from simple reading» to «reciting combined with melodious speech». It can be said that the perfect combination of tones adjusted to the local dialect and the rhythm of the words in the Chinese national operas has had an important positive effect on the development of national literature in Chinese operas. Second: Recitative readings of the main characters in the opera have an important effect on the meaning of the opera. Thirdly: In the reciting part of the opera, the language and poetry of the opera play a special role. For example: «Have you eaten?», «I've just eaten at home, I'll see you now...» etc. are common in Western operas. This kind of blasphemy by the singer not only makes the opulence and beauty of the opera clumsy and vulgar, but may even ruin the overall atmosphere of the opera.

Therefore, it is important to pay attention to the poetic and spoken language in the

opera collection. This is the reason why many foreign operas are difficult to translate into Chinese. For example, in the 1940s Huang Yuanluo's opera 秋子（qiu zi）»Qiu Zi», his literature fully shows the polysyllabic language and rhythm characteristics of the West. In particular, the introduction of foreign languages and Japanese styles into operas has become a major mistake in the art of opera. Therefore, it is important to pay attention to the Chinese ethnic language and culture in Chinese opera readings and lyrics in order to make the characters of the play alive and memorable. In the singer's art, the words and phrases have their own characteristics depending on the language in which the opera was written

Conclusion

In summary: Italian opera focuses on the musical interpretation of a variety of melodies, elaborate aria romances, and literary meanings and expressions. The style of Italian opera singing, the melody, and the rhythm and reading of the verses are closely related to the expressiveness of the musical work. But as we will see, one of the most important things in recitative recitation of opera, recitative recitation, recitative recitation, recitative recitation, rap recitation, combined recitative recitation, and recitative recitation is «melody». Therefore, it can be said that the closest and most direct relationship between literature and music is the same rich data of rhythm. But in Chinese opera reading, there is more to the question of «language» with rich cultural content than the general concept of music. The form of «singing» in Chinese opera repertoire is directly related to the Chinese language, dialect, Chinese culture, Chinese opera, and the aesthetic habits of Chinese audiences. Although in Chinese opera recitals, the focus is on the singer's singing of arias, in terms of language and culture, recitals focus on the language, culture, and local dialect of their ethnic group. However, the rich meaning and variety of expressions in Chinese operas are more attractive than those in Western languages, so the recitative with weak melody to «depict the psyche of the characters» in the opera has its own role. Chinese opera reciting is: It is directly related to Chinese people's sense of language and language habits. Chinese opera literature includes 原野（yuan ye）"Desert Place" 金湘（jin xiang) (Jin Xian) and 狂人日记 (kuang ren ri ji）"Diary of a Madman" 郭景文（guo jing wen) (Guo Jinwen). it could be said that there was a gradual maturation until the appearance of operatic works and progress in operatic recitals. Therefore, anyone studying to become an opera singer will undoubtedly become a good singer if he learns and acquires more than the reading skills that a singer should possess. Таким образом, итальянская опера фокусируется на музыкальной интерпретации различных мелодий, сложных арий-романсах, а также литературных значениях и выражениях. Стиль итальянского оперного пения, мелодия, ритмика и чтение стихов тесно связаны с выразительностью музыкального произведения.

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Appendix

learning lessons for student's opera singers

Table 2 (top-left)

070019 1	中国音乐史与作品赏析一 Chinese Music History and Appreciation of Works I	2	32	32	0		2						
070019 2	中国音乐史与作品赏析二 Chinese Music History and Appreciation of Works II	2	32	32	0			2					
070019 8	西方音乐史与作品赏析一 Western Music History and Appreciation of Works I	2	32	32	0					2			
070019 9	西方音乐史与作品赏析二 Western Music History and Appreciation of Works II	2	32	32	0						2		
070031 5	曲式与作品分析一 Musical Form and Composition Analysis I	2	32	32	0						2		
070031 6	曲式与作品分析二 Musical Form and Composition Analysis II	2	32	32	0							2	
070036 3	艺术概论一 Introduction to Art I	2	32	32	0						2		
070036 4	艺术概论二 Introduction to Art II	2	32	32	0							2	
070040 6	表演理论基础 Theoretical basis of performance	2	32	32	0		2						
070010 7	专业主科一 Professional Skill I	1	16	0	16	1							
070010 8	专业主科二 Professional Skill II	1	16	0	16		1						
070010 9	专业主科三 Professional Skill III	1	16	0	16			1					
070011 0	专业主科四 Professional Skill IV	1	16	0	16				1				
070011 1	专业主科五 Professional Skill V	1	16	0	16					1			
070011 2	专业主科六 Professional Skill VI	1	16	0	16						1		
070011 3	专业主科七 Professional Skill VII	1	16	0	16							1	
070011 4	专业主科八 Professional Skill VIII	1	16	0	16								1
总计		开设专业必修课 31 门，总计 47 分，946 学时。 其中讲授 544 学时，实践、实验 402 学时。学生应修满 47 学分。

Table 1 (top-right)

课程类别		课程代号	课程名称	学分	共计	讲授	实践、实验	第一学期 18周	第二学期 18周	第三学期 18周	第四学期 18周	第五学期 18周	第六学期 18周	第七学期 18周	第八学期 18周
专业教育	专业必修课	0700100	新生研讨课* Freshman Seminar	1	18	0	18	◆							
		070010 1	视唱练耳一 Solfeggio I	2	64	0	64	4							
		070010 2	视唱练耳二 Solfeggio II	2	64	0	64		4						
		070010 3	视唱练耳三 Solfeggio III	1	32	0	32			2					
		070010 4	视唱练耳四 Solfeggio IV	1	32	0	32				2				
		070030 5	乐理一 Music Theory I	1	32	32	0	2							
		070030 6	乐理二 Music Theory II	1	32	32	0		2						
		070013 3	形体训练（一） Shape-up Exercise I	1	32	0	32	2							
		070013 4	形体训练（二） Shape-up Exercise II	1	32	0	32		2						
		070030 7	中国传统音乐理论 Introduction to Chinese Traditional Music	2	32	32	0			2					
		070033 4	歌曲写作一 Song writing course I	2	32	32	0			2					
		070033 5	歌曲写作二 Song writing course II	2	32	32	0				2				
		070030 9	基础和声学一 Basical Harmony I	2	48	48	0			2+1					
		070031 0	基础和声学二 Basical Harmony II	2	48	48	0				2+1				

1

Table 4 (bottom-left)

0700206	合唱（台）训练五 Chorus Training or Ensemble Training V	1	32	0	32						2		
0700207	合唱（台）训练六 Chorus Training or Ensemble Training VI	1	32	0	32							2	
0700208	合唱（台）训练七 Chorus Training or Ensemble Training VII	1	32	0	32								2
0700749	长音艺术 Long-tone Art	2	32	32	0		2						
0700396	蒙古族音乐史 Mongolian music history	2	32	32	0			2					
0700377	马头琴传统演奏法一 Traditional performance of morin khuur I	1	16	0	16				1				
0700378	马头琴传统演奏法二 Traditional performance of morin khuur II	1	16	0	16					1			
0700136	意大利语语音 Italian pronunciation	2	32	32	0		2						
0700137	德语语音 German pronunciation	2	32	32	0		2						
0700194	伴奏与排唱一 Accompaniment and Play I	2	32	0	32				2				
0700195	伴奏与排唱二 Accompaniment and Play II	2	32	0	32					2			
0700218	艺术创作表演一 Artistic creation and performance I	1	32	0	32		2						
0700219	艺术创作表演二 Artistic creation and performance II	1	32	0	32			2					
0700220	艺术创作表演三 Artistic creation and performance III	1	32	0	32				2				
0700221	艺术创作表演四 Artistic creation and performance IV	1	32	0	32					2			
0700222	艺术创作表演五 Artistic creation and performance V	1	32	0	32						2		
0700223	艺术创作表演六 Artistic creation and performance VI	1	32	0	32								2

注：1、《钢琴选修》一和二总教授钢琴集体课，《钢琴选修》三和四是 2 人一节小组课。
2、《声乐选修》一和二是 6 人一节小组课，《声乐选修》三和四是 2 人一节小组课。
3、高校专业学生可以选修《钢琴选修》或《声乐选修》。
4、《合唱（台）训练》，分年级声乐（唱）或合唱（唱）进行的。其中混声乐（合唱）训练分管弦乐、西洋乐、民乐三个声部组别训练作曲集合唱训练，学生按照自己的主科方向对应组别选修。
5、《艺术创作表演》学生根据自己的专业主科方向（声乐、钢琴、二胡、手风琴、键盘）选修对应的维体练选修课，进行实践活动。
6、《意大利语音》和《德语语音》是声乐学生专业选修课。
总 计　开设实践环节 8门，总计 14 学分。学生应修满14学分。

4

Table 3 (bottom-right)

课程类别		课程代号	课程修标	学分	共计	讲授	实践、实验	第一学期 18周	第二学期 18周	第三学期 18周	第四学期 18周	第五学期 18周	第六学期 18周	第七学期 18周	第八学期 18周
专业教育	专业选修课	0700331	钢琴选修一 Piano Elective I	1	32	0	32	2							
		0700332	钢琴选修二 Piano Elective II	1	32	0	32		2						
		0700351	钢琴选修三 Piano Elective III	1	16	0	16			1					
		0700352	钢琴选修四 Piano Elective IV	1	16	0	16				1				
		0700129	声乐选修一 Vocal Elective I	1	32	0	32	2							
		0700130	声乐选修二 Vocal Elective II	1	32	0	32		2						
		0700131	声乐选修三 Vocal Elective III	1	16	0	16			1					
		0700132	声乐选修四 Vocal Elective IV	1	16	0	16				1				
		0700105	合唱与指挥一 Chorus and Master I	2	32	0	32			2					
		0700106	合唱与指挥二 Chorus and Master II	2	32	0	32				2				
		0700401	中国民歌演唱与赏析 Model Singing and Appreciation of Chinese Folk Songs	2	32	32	0			2					
		0700216	高级和声 Senior Harmony	2	32	32	0					2			
		0700357	复调基础一 Polyphonic Basic I	2	32	32	0					2			
		0700358	复调基础二 Polyphonic Basic II	2	32	32	0						2		
		0700359	配器基础一 Adapter Foundation I	2	32	32	0						2		
		0700360	配器基础二 Adapter Foundation II	2	32	32	0								2
		0700202	合唱（台）训练一 Chorus Training or Ensemble Training I	1	32	0	32		2						
		0700203	合唱（台）训练二 Chorus Training or Ensemble Training II	1	32	0	32			2					
		0700204	合唱（台）训练三 Chorus Training or Ensemble Training III	1	32	0	32				2				
		0700205	合唱（台）训练四 Chorus Training or Ensemble Training IV	1	32	0	32					2			

3

THE STUDY OF WOODEN CART BULU STRUCTURE

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Summary

Woodworkers have produced numerous items with delicate craftsmanship that have evolved and developed alongside nomadic culture. This study explores the development of wooden cart Bulu designs, their evolution, and the factors influencing their decline.

Keywords

Bvlhai (the former body of charge), charge (Mongolian horse-drawn sledge), wooden cart, cart aral (cart's buckle), bulu

Introduction:

Throughout history, Mongolians have revered wood as a versatile natural resource. Its significance ranges from selecting suitable wood for artisans and blacksmiths to recycling and preserving it. The choice of wood depends on its specific properties, such as resistance, type, characteristics, durability, and more.

1. Mongolian wooden cart

Body Part:

The structure of the «mvhlag

 Mvhlag: Mongolian wagon.

« It consists of several components: felloes structure, primary iron, wood, arch connection, cross arch connection, bow, aral attachment to the mvhlag's bottom, one side of the aral, mvhlag's pedals. Other parts include cart aral, aral saddles, aral crossbars, pillow wood, pulley, vvl

Vvl: the bottom wooden deck of charga.

Iron screws, nails, wheel tie, wheels, spindles, lugs, felloes plate, felloes, and spokes, felloes end nails. When assembling the wooden aral, saddle wood is prepared, and pillow woods are shaped to size and adjusted in pairs. Steel is processed to size to fit the structure accurately.

Additionally, the evolution of horse-drawn charga designs, known as the former body of wooden carts, is crucial to this study. Horse-drawn chargas' durability and productivity depend significantly on their design. Birchwood, known for its durability, was commonly used where available. Processed birch wood has a rich history in Mongolian nomadic culture, especially for mass-produced items. Wood for charga must be undamaged, unscathed, not overly dry, and carefully selected to avoid splinters. Generally, many researchers reckon that the modern cart is the continuance of the charga's design module. Each module's transformation had formed a significant part of the process from chargas to carts, facilitating their evolution.

(To bend the chin of a charga, use a grooved wooden mould or live wood.)

Picture 1. Mongolian horse-drawn sled

As the production of charga matures, they become bvlv. In this part of the research, it is necessary to compare bvlv and charga's connections and effects. There is a considerable difference between the time from the use of bvlhai to the charga since the design of charga fronts became more sophisticated, leading to the development of carts with bvlhai. Thus, comparing bvlhai and charga designs is essential in this study, as their design evolution differs significantly.

In the research module, it is necessary to input and display some data from the ancient Mongolian wooden cart history format module and process it to display the general format of detailed changes.

Before using the prepared tools to bend the charga (Chin here means the cow or horse chin; its use is to pull the charga or wooden cart.), the method of using smoke to flatten the chin directly was prevalent. This study explains how the charga chin or the two sliding parts of the charga were bent in Mongolian ways, based on conversations with experienced Mongolian woodworkers. Mongols used vivid and personalized names for everything. There are two chins under the charga, called vvl, which are technically the only accurate names for research.

The terms eruu (chin), nuur(face), gar(hands), hul(feet), and xina(jaw) are frequently used in the structure of items used by Mongolians to perform their crafts, and Mongolians themselves can understand and name it habitually. Although they have a unified name, it has different local names. Some places refer to the bottom of the charga, made of iron, as vvl. The Mongolian charga craftsman and carpenter state that the «eruu»(chin) part constitutes a third of charga's vvl, which is an appropriate form.

It is how the charga system was processed, and it is the evolution of the cart system. The two legs of the charga form a crossbar structure called the gvvl (Gvvl: central wooden bearing), with two wheels at the ends modified for rotation.

The «eruu»(chin) of a charga or matmal

Matamal: bendable part.

, as described by some indigenous people, forms an aral by shifting the flexed part forward to a straight state. How an aral is processed refers to its slightly changed form

rather than a completely different form.

A comparative study was conducted on the historical data of how to modify the first module of the wheel system, explaining that the wooden wheel was made by sawing horizontally into a solid state and drilled onto the wooden axle to form a wheeled cart.

The wooden axle sprints with its wheel made in a solid cross-section state and this type of wooden hub has not been used in production for a long time. Therefore, the new wheel type was straightly bent into a circle, supported by a series of wooden spokes intersecting.

There has been some transformation in shapes and material improvement from one module evolution to the other. There was a distinct period from using wooden wheels to applying a series of wooden spokes to support the wheel. The employment of the wooden spokes, given that they were to support the wheel, has been expanded in significant number.

The two solid wooden spokes

Two wooden spokes are widely used in Republic Mongols.

Those intersected together are average in form, but they put much burden on the labour of horses and cows. The most labour-saving and important module is the appearance of tsum

Tsum: boxing, metal inserted.

which works efficiently with wheels.

Inserted right next to bvlv», tsum's force accelerates the rotation of the end of the wheel hub, and its advantage is that it contributes a lot to the evolution of saving the labour of the wheel.

In summary, the main concepts of wooden cart bodies are: First, labour-saving, Second, lightweight body structure. Third, sturdy and durable. Fourth, meeting the comfort of the human body, and so on.

These requirements are consistent with the modern practical design, which has been completed, produced, and improved from an early stage under the requirements of modern design concepts. With the emergence of various transportation needs for humans, horses, cows, and other creatures, wooden carts have evolved from simple wood to the widespread use of iron and other materials.

In the application field of nomadic Mongols, although many researches have been done on wooden carts, there is a great need to compare the cart systems with previous and other modules.

Conclusion

Mongolia's rich historical and cultural heritage makes it a centre of civilization, bearing witness to early human settlements and the nomadic culture of Central Asia. Protecting cultural heritage, including historical and cultural monuments, is crucial for preserving a country's cultural identity and independence.

All cultural heritage, including the commemoration of history and cultural immobility, serves as a grand display of the country's cultural level and a central argument for independent guarantees. In this sense, cherishing all cultural relics in the wilderness is an issue that any country or regime should consider.

This research paper sheds light on the derivation of bvlv from bvlhai. Researcher Che. Songino suggests that bvlhai has been widespread among Mongols for a long time since the early age; it was said to be a kind of svrgaa

svrgaa: the two long handles of a wagon at an early age.

It was connected to the horse lead, the first of its kind.

BULU is considered to be a development from bulhai; it was the process of bvlv's formation, featuring elaborate iron-casted tsum or a four-sided checkered metal structure with a central hole that rotates with the wooden hub of horse-drawn carts. During the rotating process, it lubricates the abrasiveness of the wooden cart's bill, neutralizing friction and enhancing durability. Mongolians put various livestock's fat. Mongolian livestock: cow, sheep, lamb, horse, camel.

When especially applying them up on the main two tsums and central wooden hub, by mixing the oils with pot soot to enhance the wooden cart's bvlv's flexibility.

Bvlv's domed shape and craftsmanship represent the precursors of the vehicles' wheels today.

Reference

Songino..Ch Livestock equipment. Ulaanbaatar, 1987.

Turbat. TsA drawing of a chariot on a cork from a Hunny tomb. UBS Board of Directors. Tom. III, fasc. 2, UB

Uljii.J «History of Barga Mongol» Ulaanbaatar 2012

Qagaan.Te Traditional woodwork culture of the Mongolian nation» 2003

Tsuldem.Barga nomad», Western Mongolia, 2015

EARLY CHILDHOOD DRAWING AND DRAWING SKILLS SURVEY
(3-4 years)

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Abstract

The progression of drawings that children make over a period of time can show significant growth and development, as well as determine academic capabilities and skills characteristic of their developmental level. Children begin their drawing process as early as they can physically hold a drawing utensil. From their first attempts at a drawing, consisting of random marks and lines, to their first representational drawing, children are making efforts to communicate to the world around them and establish meaning through the images they create. It is through their drawings that children express the views and interpretations of their experiences.

Key words

Young children, Dash type usage, Describing ability

Introduction

In educational science, the ability to draw is defined as the level of practice and experience in drawing that results from the acquisition of a certain level of knowledge, skills, and practices in the fine arts. The ability to draw has a direct effect on the nature of the drawing process, and the representation of the image is related to a combination of 'thinking and drawing' and 'performance levels and results'.

As a child develops small muscles in his arms and learns to control his movements visually, he is able to express his imagination and feelings through pictures. During this time, each child's ability to draw develops in different ways at different methods. This is a non-competitive opportunity, but it can be influenced by the child's innate talents, skills and attitudes. Each stage of a child's development has its own characteristics, depending on their ages. The first stage of a child's drawing ability begins with the introduction of drawing tools and drawing materials.

The "Early Childhood Drawing and Drawing Skills Survey" is a survey to determine the level of drawing skills of children under the age of 3-4, and it will continue to be conducted for each child's age and level of development.

Features of drawing and drawing skills of children under 3-4 years of age

At the age of 2-6, children go through certain stages of drawing. Researcher Victor Lowenfeld (USA) has step-by-step described the developmental and cognitive characteristics of drawing in accordance with the characteristics of children. V.Lowenfeld studied the development of children's drawing and considered it as a specific stage. These include:

1. Scrawl with the pesncil period / 2-3 years /

2. Pre-schematic period / 3-4 years /
3. Schematic period / 6 years /
4. Drawing closer to reality / 8-10 years old /
5. Real depiction period / over 12 years old [11] (Bayrmagnai, 2013)

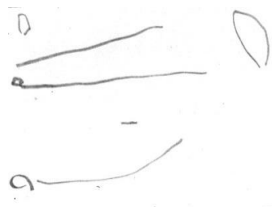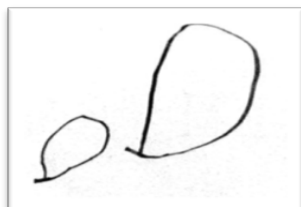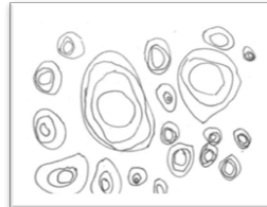Figure 1.   Figure 2.   Figure 3.

Features of drawing and painting for a 2-year-old child: A characteristic of a child of this age is the process of getting acquainted with the shape of objects and drawing tools. In this case, the most important thing is to help the child get acquainted with drawing tools and other tools and learn to use them. The child is 2 years old during the spinning and scrawling with the pencil, they do not pay much attention to the spatial location of what they are depicting.

2 years old: Lack of visual control of hand-paw movements, so they scrawling with wrist and elbow movements.

2 years and 3 months: The ability to draw a circle connecting the beginning and the end is related not only to the combination and efficiency of hand movements, but also to the acquisition of visual control of hand movements.

2 years and 6 months: At this age, you start drawing "arcs" or circles. For example, when drawing on the paper with a pencil, the separate lines merge into a circle, and when broken, a crooked line is formed. Understanding the relationship between the movement of the pencil and the line between the paper and the paper changes the child's circle. He repeats the same movement many times and is very happy to see the same lines. As a result, curved lines are formed, and the circular lines within them create the original rhythm.[12] (Batchuluun, 2011)

Research phase results:

A total of 291 children under the age of 3-4 in 7 districts of Ulaanbaatar, Bulgan, Selenge and some soums of Tuv aimags were involved in the survey of young children's drawing and drawing skills.

Research methodology:
• Analyze children's work
Types and use of lines and images in the representations of 291 children aged 3-4 years

[11]Bayarmagnai, Z. (2013). Methods for developing students' creative thinking skills in fine arts classes. Ulaanbaatar, Kitab
[12]Batchuluun, S. (2011). Fine arts education, UB: Eternal letter

Table 1.

№	Code	Age	Gender	Lines types					Images types					
				Straight line	Wave line	Curved line	Span dash	Compound line	Triangle shape	Square shape	Rectangle shape	Round shape	Oval and circle shape	Compound shape
1	O.B	3,5	Male			+	+	+						+
2	N.A	3.2	Female	+	+		+	+						+
3	L.G	3.8	Male		+	+	+	+						+
291	S.N	3.3	Female			+	+	+					+	+
Total score				57	126	216	271	168	4	1	2	44	110	138

Table 2. Usege of female and male children's drawings, line drawings and image types

№	Age	Gender	Number	Lines types					Images types					
				Straight line	Wave line	Curved line	Span dash	Compound line	Triangle shape	Square shape	Rectangle shape	Round shape	Oval and circle shape	Compound shape
1	3-4 Years	Female	142	28	59	103	130	88	3	0	0	20	50	66
2		Male	149	29	67	113	140	80	1	1	2	24	60	72
Total score			291	57	126	216	271	168	4	1	2	44	110	138

A total of 291 children under the age of 3-4 in 7 districts of Ulaanbaatar, Bulgan, Selenge and some soums of Tuv aimag used lines and types of images in their drawings.

Types of lines: 19.5% for straight lines, 42.3% for wavy lines, 74.2% for curved lines, 93.1% for curved lines, and 54.2% for composite lines.

Types of shapes: 1.3% for triangles, 0.3% for squares, 0.6% for rectangles, 15.1% for circles, 37.8% for ellipses, and 47.4% for composite shapes used in the representation. A total of 142 female children surveyed used dashes and image types in their drawings.

Types of lines: 19.7% for straight lines, 41.5% for wavy lines, 72.5% for curved lines, 91.5% for curved lines, and 61.9% for composite lines.

Types of shapes: 2.1% used triangles, 0% square, 0% rectangular, 14% circular, 35.2% oval, and 46.4% composite.

The use of scrawls and image types in the imagery of 149 boys surveyed.

Types of lines: 19.4% for straight lines, 44.9% for wavy lines, 75.8% for curved lines, 94.6% for curved lines, and 53.6% for composite lines. Types of shapes: 0.6% for triangles, 0.6% for squares, 1.3% for rectangles, 16.1% for circles, 40.2% for ovals, and 48.3% for composite shapes used in the representation.

Conclusion

Research has shown that the types and uses of lines and images in children's drawings vary depending on the age and mental development of young children. A total of 291 children under the age of 3-4 were surveyed, and the proportion of arcs was 93.1% or the maximum, of which 37.8% were oval and 47.4% were composite. It has been found that due to the combination of hand movements, it is possible to draw circular and oval shapes with the help of arcs.

To compare in terms of gender, the use of lines and shapes by gender is 94.6% more for boys, 91.5% for girls, or 3.1% more for boys, 40.2% for boys, and 35.2% for girls, or 5 for boys. % had the ability to use more lines and images in their drawings.

Reference

Bayarmagnai, Z. (2013). Methods for developing students' creative thinking skills in fine arts
classes. Ulaanbaatar, Kitab
Batchuluun, S. (2011). Fine arts education, UB: Eternal letter
Tseden-Ish, D. (2006). Research to develop the ability of primary school students to draw and
draw with dots and lines (Ph.D. in Education). Ulaanbaatar: Mongolian State University of Education

INCORPORATING CREATIVE IDEAS ON FURNISHING ORNAMENTATION TO FRAME OF A MONGOL GER

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Abstract

The Yurt or Ger, a traditional Mongolian dwelling made of wood, felt, and other materials, has an intriguing structure that combines labor and the human spirit. Research and development are required for cultural heritage.

The paintings on the rocks, which were probably made abstractly by studying the footsteps of animals from the time when game animals were domesticated and livestock was introduced, provide evidence for the original concept of the house's frames of the Mongol Gers decoration. The pieces that are patterned are unmistakably infused with Mongolian art, a singular sense of perfection, and home patterns.

Bending, bending, and unfastening the straps is an intellectual culture, and each of the key components of the house has its own distinctive patterns and qualities. Traditional Mongolian yurts, also known as Mongol Ger, are composed of wood, felt, and other materials. They have an unusual design that mixes human effort with ingenuity. For cultural heritage, development and research are necessary.

The drawings on the rocks, which were probably created abstractly by observing the animal footprints from the era when cattle and game animals were domesticated, offer proof of the original idea behind the house's frames of the Mongol Gers ornamentation. Unmistakably interwoven with Mongolian art, a unique sense of perfection, and domestic patterns are the objects that are patterned.

Each of the main parts of the house has its own unique patterns and attributes, and bending, bending, and unfastening the straps is an intellectual culture.

Key words

Ideas on furnishing ornamentation of frame of Ger, Horse stamping, Wooden frame, Stripes and Annual rings of 12 months representative zodiac

Introduction

It is inseparably connected with the advancement of different sorts of residences that have been protected by individuals since antiquated times and is common among Mongolian tribes. The Mongolian house with its show confuse structure was made due to the have to be move the house amid movement. Mongolian domestic plan and beautification has advanced over time, but it is commendable that it still jam its legacy. Domestic enhancement has been brightened in a way that jam designs and pictures made conceptually from custom, religion, and typical environment. Numerous inquires about have appeared that the antiquated shape of the house was unadorned contract sticks combined with the shape of a divider. «Uni was initially colored with salt water-based honzos, and rather than utilizing ready-made willow sorghum, a red-

brown foundation is set when the uni is shaped» (Molomzhamts, 2008, p. 120). From the time when characteristic earthen paint was prepared utilizing the conventional Mongolian strategy, it was begun to be brightened by putting color paint on the wood of the house. In old times, normal ruddy soil and yellow clay were utilized for manual color handling. «Ruddy earth was called zos, and the zos was blended with warm crude drain containing proteins to create paint, and the strategy of scratching the oo was utilized, and when white wood was scratched with this handled paint, it was utilized for a long time to set» (Davaasuren, 2014, April)/buural famous from mother's verbal discussion/. Characteristic paint has the advantage that it holds the cleaning strategies that enter and retain into the surface of wood items. Since the chest portion of the house is uncovered to discuss trade, distortion, the smoke and warm of the open fire influence the solidness of the wood, so scratching portray moves forward the quality of the item. After the clay portray, there were colors like Shunh, Khond Aram, Engeseg, Ten, etc., but it was more common to paint Shunh in red-brown color and enhance it with a basic borgil fashion blended with smoke and sediment. In later times, the surface of the uni has been dyed and enhanced with conventional neighborhood designs, which have evolved into green paint within the handle of utilize. It can be seen within the present day domestic enhancement that the sun's light blended with the ruddy color of the figure isn't too bright, and the head of the unin is painted in calm colors, making agreement of colors, and utilizing the impact of normal light to form extra enhancements concurring to the excellence prerequisites. There are enrichment strategies such as speck sewing, weaving, puncturing, weaving, and etching.

Crafting the frames of Mongol Ger by the horse stamping patterns

«When woodcarving created in our nation, taking after the same transient propensities, wooden mugs, plates, troughs, scoops, pots, chests, and other wooden domestic structures that are light, solid, and able to resist extraordinary hot and cold climate conditions when moving and carrying. Let's specify one thing related to the reality that «(numbers, dividers, dividers, entryways) have been made and brightened with designs» (Yadamjav, 2004, p. 40). In terms of the shape of the seal, there's a plausibility that the lords utilized to make a clan seal symbolizing the names related to family things and devout customs, and put the clan seal on coins and horse thighs to spread the clan seal. «The most root of the Mongolian horse seal is the clan seal» (Saruulbuyan, 2008, p.23). The domestic shows put away within the legacy gallery of the 13th century affirm that the pillars and doors of the house were carved and beautified with tribal seal pictures. For illustration: sun shaped or traditional craft could be a seal that's broad in Mongolia, related to the revere of hereditary clans and seal with a table: «It is found on Binder's spring shake and on the coins of Genghis Khan» (Saruulbuyan, 2008, p. 23). The seal was utilized as a sign for residential utilize and customarily critical steeds, as well as worshiped on the premise of hearth and domestic. It can be seen here that within the to begin with put, the fashion of brightening the physical portion by painstaking work has been protected in history.

Crafting the frames of Mongol Ger by wooden frame, stripes and annual rings of 12 months representative zodiac

A characteristic packaging object When the frames of the Mongol Gers is cut horizontally, the frames of the Mongol Gers's circle or age ring stands out clearly. The number of annual frames of the Mongol Gers rings can be a characteristic design. It can be called filamentous arrangement, annual ring, stripe, etc. Through investigation, it was found that if we apply innovation in decorating wood and wooden objects with wood grain, it is completely consistent with the progress that has been achieved. intentional living and can be especially groundbreaking in terms of planning. In the past, houses were built with ready-made natural materials, people did not think about beautifying them, but when the weather changed, we made wood, tables and chairs, cups, and steamers to meet family and family needs. Elegant request may have seen. "Each frames of the Mongol Gers comes in an incredible variety of colors, from pure white to dark, yellow, orange, red, green, and more." (Yadamjav, 2004, p. 42). It can be unique colors and designs, schemes of wooden objects with their characteristic shapes using tools, and brightening elements of Mongolian homes with rings frames of the Mongol Gers every year. G., who was engaged in the private production of wooden objects throughout or of the central region, had the unused idea of not beautifying the wooden structure of the house, but also making furniture and other physical objects that highlight fabric properties and general information. By being seen a display house by a man named Otgonlhagva, which could be said to be collected in wood without nails. Because the grain and surface of the wood were so beautiful, it inspired the expert to plan and embellish with wood for the first time, and tried to create a single copy of these works. The wooden entrance of a Mongolian house is made of two planks, and each eye of the entrance plank is usually raised. Most attractive is the square eye decoration in the middle of the entry panel, cut and glued to coordinate with the grain of the wood. This reflection would like to recommend considering this innovation and expanding the strategy of brightening wooden objects.

Research methodology

Based on archive and document materials, the study was conducted by investigating new ideas in comparative and intelligent strategies.

Result and discussion

In framework of the study, it suggested introducing some type of Mongolian Ger interior innovation, as well as remembering and protecting Mongolian history, heritage, culture and customs. This is unique in that it has not been reflected in previous research and it could be a source of unused ideas for those learning about the field.

Conclusion

To reflect innovative ideas in decorating indoor frames of Gers, research has been compiled and presented briefly. The purpose of decorating indoor elements is to improve durability and avoid deformation. Due to the characteristics of nomadic husbandry and climate, people placed signs to mark the time and moment when decoration and painting changed, marking the beginning of beautification. In today's society, accustomed to the rapid development of technology and a sedentary lifestyle,

we can see the phenomenon of forgetting the culture and heritage of the Mongolian people. Therefore, we believe it is necessary to highlight the benefits of designing the physical cultural heritage called home and propose creative ideas in embellishment and decoration ideas.

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PRESERVICE ELEMENTARY SCHOOL TEACHERS' LEARNING OF ACTION RESEARCH

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Abstract

Guide to acquisition of action research methods for pre-service elementary school teachers provided and research results discussed annually

In 2013-2016, AR was a part of the state examination. The third year undergraduates did AR of their interest and they presented it. Thanks to it, all students learnt the nature of AR.

In 2018, 6 hours allocated for action research in compulsory undergraduate professional course T.PE201 titled "Young school child's psychology" in an elementary education teacher syllabus

This course is offered in spring of their second year. Learners choose action research topics as an assignment, plan and do AR.

Keywords

Action research (AR), AR guide, Student teacher's development, Issues and solutions.

Literature Review: Action research is a systematic investigation done by teachers and others involved in teaching to gather information to provide strategies for improvement in the ways that their school operates, how they teach and how their students learn. (E.Mills). Definition of action research can be summarized as a participatory and democratic process that is guided towards developing practical knowledge in the quest for achieving one's passions and goals. In other words, action and reflection, theory and practice are combined together to find the solution to challenges faced by teachers through a participatory approach. (Candace Kaye, (2015) New Mexico State University). Action research is a comprehensive creative process used in improving practices and solving problems by combining action with research, reflection, training and analysis. It is a "learning by doing" approach that continue from identifying a problem, resolving it successfully, and taking initiative to taking the next steps if they fail. (Ch. Purevdorj, 2011)
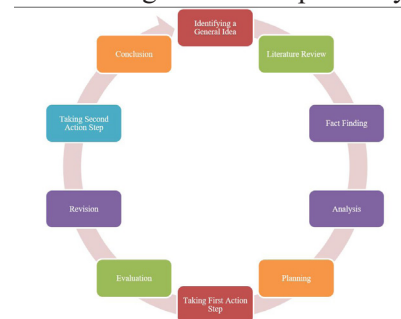

Diagram 1. AR Stages & Cycle (Mertler, 2014)

Research Methods: *For this research, we conducted multiple-year analysis using methods of questionnaire, interview, literature review and case study. Upon analyzing some of the distinct topics on action research conducted by pre-service elementary school teachers, we have found that research directions have changed over the years which is attributed to evolving social demands and changing times, as you can see from the following list of AR topics (sample topics).*

AR Topics in Academic Year 2018-2019 (Examples of Second Year Students)

Table 1. Student Teachers' AR Topics

№	Research Topics	2013-2014		2014-2015		2015-2016		2017-2018		Total	
1	Teacher Development	8	2,5%	9	2,7%	13	5,6	10	5%	40	3,7%
2	Teaching Methodology	10	3,1%	11	3,3%	30	13,0	6	3%	57	5,2%
3	School & School Environment	16	5%	14	4,2%	11	4,7	9	4,5%	50	4,6%
4	Lesson & Lesson Planning	6	1,8%	12	3,6%	21	9,1	12	6%	51	4,7%
5	Child's Development, Formation & Socialization	18	5,6%	15	4,5%	23	10,0	25	12,5%	81	7,5%
6	Ethical & Aesthetic Upbringing	9	2,8%	30	9,1%	12	5,2	6	3%	57	5,2%
7	Learners' Physical Development	7	2,1%	9	2,7%	11	4,7	9	4,5%	36	3,3%
8	Learner's Learning/ Reading, Writing, Thinking. Drawing & Imagining Activities	168	52,6%	153	46,6	31	13,4	98	49,2%	450	41,8%
9	Child's Development of Intelligence, Speech, Cognition, Socialization, Behavior & Physical Growth	62	19,4%	57	17,3%	51	22,1	19	9,5%	189	17,5%
10	Parents & Public Relations	15	5%	18	5,8%	27	11,7	5	2,5%	65	6,4%
	Total	319	100%	328	100%	230	100%	199	100%	1076	100%

Д/д	Topics of Child Studies	2018-2019 Academic Year	
1	Psychological Aspect of School Readiness	3	5%
2	Research on Ability of Elementary School Learner's Adaptability	2	3,6%
3	Research on School-induced Anxiety and Stress	5	9%
4	Young School Child's Study Load Level	2	3,6%
5	Development of Child's Physical Growth, Speech, Cognition, Emotion & Socialization	19	35%
6	Communication and Attitude of Parents, Teacher & Child	16	29%
7	Child's Learning Activities	8	14,8%
	Total	54 students	100%

In 2018-2019, 6 hours was allocated in contents of the course "Psychology of Young School Child". We aim to develop and implement assignment guidelines for an integrated assignment. In 2019-2021, AR plans were developed. Regarding the AR topics, undergraduates identified and developed plans for the following general ideas such as child's physical growth, speech, cognitive, emotional and social development accounts for 35%; parents, teacher, child's relationship and attitude for 29%; reading, writing, thinking, speaking and drawing for 14.8%.

Process & Results
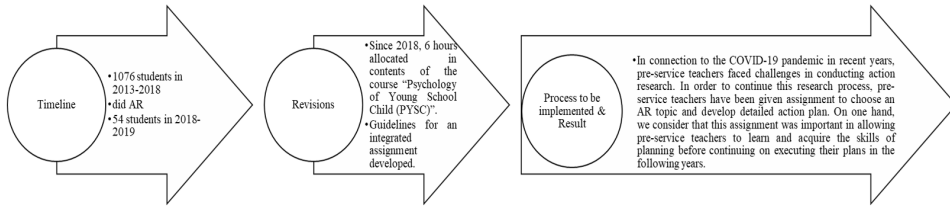
54 undergraduates surveyed

53.7% of learners said the biggest challenge was to identify a general idea

AR planning 50%

Revision 40.7%

On the other hand, issues must be identified by asking ourselves questions such as "How to improve action research in the future?", "as guidance providers, what should teachers be aware of?" "What mistakes should we ensure students to avoid?" etc. and special attention must be given to these stages of AR.
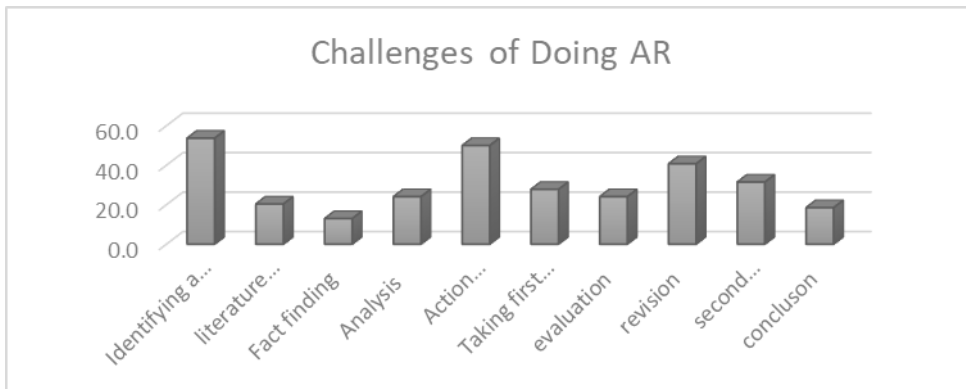
The Following AR Support Needed

- • Books, Handbooks -27.7%
- • To get information on child from a teacher-24%
- • Information on AR is much needed – 46.2%
- • More explanation for material resources, literature review, time management, sample research, joint discussion, topic choice– 35%

Student case 1

Let's look at the experiment section of a child development research conducted by B. Ariunzandan, 2017 graduate of the Teacher School of the Mongolian National University of Education. The research student carried out her experimental research on several children in the 1st grade. It was conducted throughout one study quarter by selecting 5 pupils and having them play for 10-30 minutes after school hours. She tested teacher roleplaying process for 25 times in total, 4-5 times per child. Initial issues encountered were children fighting over the role of teacher, the child in the role of teacher scolding the other children, drawing on the others' notebooks in red pen, and forgetting his/her teacher duties etc. In the meantime, the research student played

the role of pupil among the other children, guiding the child in the teacher role by questions and reminders. For example, the research student guided the roleplaying process by asking the teacher-child questions like "Teacher, can you speak slowly?", "Teacher, won't you check now?", and "Teacher, can you please explain again?". After the experiment, she considered that there were changes in the children's skills, as demonstrated by their ability to add and subtract within 20, with some children even managing to add and subtract within 100, solve basic story math problems, and their increase in responsibility and attention to their teacher. (Ariunzandan B.)

Student case 2

Topic: Progress and result of the development and testing of compensatory education program for children from herder families in remote rural areas (2019)

L.Tsedevsuren, conversion class student of Teacher School of the MNUE, developed an action research plan during the School child psychology course and successfully defended it as a creative assignment as part of the state examination after compiling the results of the action research in the spring of 2019. The research planning was structured as follows:

Stage	Activities	Completion date	Outcomes
Identifying the general idea	- Topic selection, investigation, identification of challenges.	IV/15	• General idea identified. Topic rationale, objective and outcomes defined.
Literature review	- Review published literature relevant to the topic - Review internet sources - Review academic works	IV/16-22	• Literature relevant to the topic reviewed and reflected on. • Sufficient theoretical knowledge obtained.
Fact finding	- Select children to participate in the research - Conduct survey and make baseline assessment - To meet the pupils' family and get the permission	V/01-15	• Research participant children selected • Baseline assessment completed • Met with children's families
Analysis	- Analyze personal information. - Develop baseline assessment results (speaking, reading, writing and thinking skills)	V/15-30	• Child assessed and evaluated • Child's overall level determined based on baseline assessment
Action planning	- Create schedule to work with the children and develop a detailed plan	June - August	• Plan to work with each child developed

First action step	- Commence activities outlined in action planning	June	• Activities started according to planning
Evaluation	- Evaluate interim progress of commenced activities	June	• Interim progress evaluated
Revision	• Plan improvements based on evaluation	July	• Changes in children reviewed and relevant improvements planned
Second action step	• Commence second phase based on revised planning • Monitoring and evaluation/ improvements	August	• Second phase of action research successfully completed. • Reviews and final evaluation completed.
Conclusion	• Evaluate action research results and make conclusions and reflections.	August	Child ready to proceed to next level of education

Conclusion

At the start of the experiment, 3 children aged 6-8 who are outside of the school system or dropped out were selected. The research student conducted extensive literature review on the theoretical sources and materials. The research student mentioned that the innovative side of the research was the attempt to support the reading, writing, drawing and speaking skills of at least one child who was dropped out of school. Furthermore, he highlighted that a change in the parents' approaches to working with their child was observed. The research student met and got acquainted with the pupil's family and studied the personal background in detail. This section also includes individual assessments on the child's personal characteristics, personality, habits, routine, the parents' attitude, and the child's emotions.

The research student concluded that the problem of rural herder families in sending their children to school due to socio-economic difficulties can be effectively addressed by organizing the team in a family environment to compensate for elementary education delays and changing parent attitudes towards re-enrolling their children back to school. A distance learning session was conducted to spread awareness to the public and teachers that knowledge can also be learned from parents and other sources as opposed to the notion that the only way to gain knowledge is from a subject matter teacher in a teacher-centered, traditional classroom. It was highlighted that after the distance learning session, children enrolled into the 2nd and 3rd grades of the soum's secondary school.

Main conclusion

During 2013-2017 academic years, the Teacher School started the action research framework and directed students to conduct them. From 2018, the Young school child psychology course content was amended to allow continuous learning for students by developing action research plans and writing papers, creative assignments for state examinations and thesis works.

As a result of action research, our students were placed no. 1 in academic conferences and competitions organized among the entire MNUE students. In 2013, "Magical books and teaching aid" by Undarmaa and Bunia won 1st place. In 2014, "Opportunities to support children's physical development through mobile toys and games" by Ganpurev -"Best research student" and 1st place. In 2016, D. Ariunzandan won 1st place in the "Best Research Student" nomination. By participating in annual competitions, students and teacher saw significant progress in their development. Collection and pamphlet showcasing the students' achievements should be published by each year. On one hand, it's an opportunity for students to make self-assessments and on the other hand, it allows them to learn from others.

In order to conduct any research, research cycles are essential as shown from the research process. For instance, by breaking down the challenges and issues faced, the biggest challenge was to identify the general idea and define the topic and objectives.

Research students were good at adhering to research ethics and principles and establishing initial communications in terms of taking consent from parents and clearly explaining the main objectives and outcomes of the research work. Judging from the students' research works mentioned above, it's worth highlighting how important teacher's guidance and recommendations are and these can be sample research papers for others to learn.

In the future, it would be extremely helpful for student researchers if their planning, implementation, revision and evaluation skills are continuously supported when they do AR.

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REGARDING THE INFLECTION IN MELODY AND RHYTHM OF THE SONG "PRAISE OF MOUNT BAYAN ZURKH" ORIGINATING FROM ZASAGT PROVINCE

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Abstract

The composition "Praise of Mount Bayan Zurkh" originating from Zasagt Khoshuu or Province, holds great significance as it is performed exclusively during the ceremony of offering of Mount Bayanzurkh. This musical piece has a historical legacy, having been performed from the late 19th century to the early 20th century, until the onset of the Japanese occupation.[13]

Keywords:

Mount Bayanzurkh, Song of religion and state, Ceremony of offering.

Main Text

The book "Ancient Mongolian Songs from the Swedish Museum of Ethnography," published by the Mongolian State University of Arts and Culture, a compilation of music collections by the Swedish researcher Haslund-Christensen from 1928-1939 includes a recording of the ceremonial offering song dedicated to Mount Bayanzurkh which was referred to as the Great Khan of Zasagt Province (Soronzonbold, 2018, p.19)

In 2018, the lyrics of the song "Mount Bayanzurkh" as performed by Magsar were included in the book "Study of Mongolian Folk Songs" without its musical notation. This book, edited by Sarangerel and Tolemj of Inner Mongolia, was a collection of works originally gathered by Haslund. (Sarangerel, Tulumj, 2018, p.167).

In the book titled "Summary of the Intangible Cultural Heritage of the Horqin Right Front Banner," which was edited by Tseng Lin and Oyungerel, documentation of the ceremony dedicated to the offering of Mount Bayanzurkh is included.

Bayanduuren, a herdsman and singer hailing from Zasagt Khoshuu (province), sang and incorporated the "Praise of Mount Bayanzurkh" into his musical album.[14]

Mount Bayanzurkh, situated 7 kilometers to the north of the Bayanzurkh natural barrier within the Guiler Town of Zasagt Province, is notable for its Noyon Peak, which stands at an elevation of 883.9 meters above sea level. Locally, it is respectfully referred to as the "Father Mountain." In the year 2010, a construction effort led to the establishment of a platform featuring over 1,700 stone steps leading to the mountain's summit. Additionally, an altar adorned with representations of the sun, moon, and stars was erected.

In 2013, a temple was constructed on the slopes of Mount Bayanzurkh, alongside the reconstruction of the Uuliin Mokhoo Temple. During the Mount Bayanzurkh ceremony, sacred inscriptions are included as part of the offerings to honor the great

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[13] "CD of Bayanduuren," Bayantsagaan Altan Delkhii album, "Praise of Mount Bayanzurkh" song description.
[14] In 2012, 15 songs of Bayanduuren were included in the album of folk songs of Zasagt Province.

spirit of the mountain. This ritual involves the burning of incense for purification, the recitation of the 'Praise of Mount Bayanzurkh,' and the performance of traditional cairn ritual songs from Zasagt Province. Within the Mount Bayanzurkh temple, the sacred statue Vanchigzalbuu,[15] standing at 2.5 meters in height was erected.[16] Mount Bayanzurkh features 49 ovoos or cairns, embodying two distinct historical traditions. One tradition originates from early Mongolian symbolism, where numbers 3, 7, and 9 held significance, and the multiplication of 7 by 7 equaling 49 symbolizes the 49 provinces of Inner Mongolia.

In 2015, the "Ceremony of Offering to Mount Bayanzurkh" was officially recognized as an intangible cultural heritage during the 5th selection of the Inner Mongolia Autonomous Region. Subsequently, in 2020, it attained registration on the list of intangible cultural heritage in China.»

In 2008, the Mount Bayanzurkh Ceremony Association was founded, with Wang Han Zhu as its chairman. Over subsequent years, Wang Han Zhu received significant recognition for his contributions to intangible cultural heritage preservation: in 2014, he was designated as the bearer of the intangible heritage at the provincial level; in 2015, at the aimag (regional) province level, and in 2016, he was honored as the bearer of the intangible heritage at the national level.

Wang Han Zhu reconstructed the rites and regulations of the Mount Bayanzurkh Ceremony, faithfully adhering to tradition. This involved meticulously collecting reports and documents from local herders.

According to the aforementioned research, the singing of the "Praise of Mount Bayanzurkh" is a practice predominantly carried out by monks and palace performers, with women and common folk not participating. This observation is indicative of a connection to the government's treatment of the song, considering it as one of the five songs associated with the province's religious and state affairs[17] (Tuya, 2021, p. 22). Furthermore, during the performance of this song, participants would be sitting on their knees while holding a yellow khadag or khata.[18]

The "Praise of Mount Bayanzurkh" song was originally categorized as a fife song, but this genre has since faded into obscurity, with few people possessing knowledge of it today. Mo Oyun's elder brother was one of the individuals who used to sing fife songs, but unfortunately, there was no one to carry on this tradition as his successor. Historically, this song was performed in conjunction with a fife. Presently, Mandakh, the grandson of elder Oyun, has taken it upon himself to revive this tradition and is diligently learning to perform the "Praise of Mount Bayanzurkh" song.

We possess three primary historical records of the "Praise of Mount Bayan Zurkh."
    1. The sheet music for the song "BAYAN ZU-

[15]A Tibetan word meaning "Honored and Abundant Khan Mountain" and "Energetic".

[16]Religious statue in color, cast at Gumben Monastery, based on the religious idol worshiped at the home of Eesiinyamaa at the Tsogchin bank of the Bongat natural barrier, Guiler Town.

[17]Five songs/hymns of religion and state: 1. Bainun Tsagaan Altan Delkhii. 2. Yalgasan Erkhet Dalai Lama. 3. Namyan Dalai 4. Praise of Mount Bayanzurkh 5. Ungu Saitai

[18]When I, a humble researcher, conducted field research, From the recollection of Oyun. March, 2021

RKH, THE GREAT KHAN OF ZASAGT KHOSHUU" included in the publication "Ancient Mongolian Songs from the Swedish Museum of Ethnography" (sheet music was transcribed from a performance from the 1930s).

2. The sheet music in the publication titled "Summary of the Intangible Cultural Heritage of the Horqin Right Front Banner" (as transcribed from a performance from the 1950s)

3. Performances of the song by artists Bayanduuren, Erdenetogtokh, and Hunstu, recorded in 2012. Upon a comparative analysis of the transcribed musical notations, the following observations emerge
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Given the presence of musical notes and lyrics from a 1930 performance[19], it is likely that Magsar's rendition of the song was recorded in the sheet music (as seen in Figure 1).

Figure 1. *Performed by Magsar "Bayan Zurkh, the Great Khan of Zasagt Khosuu."*
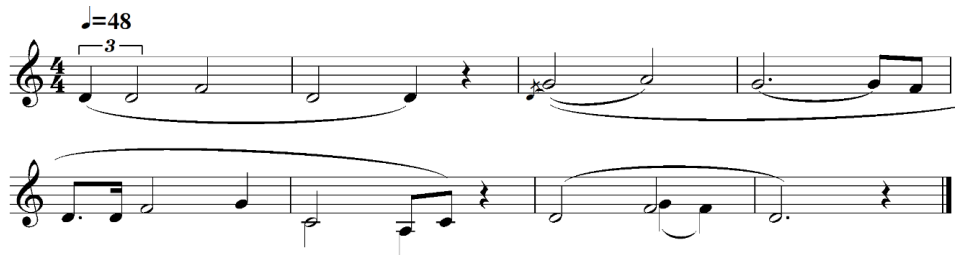
The melody of the song follows a 4/4 time signature, consisting of 8 bars. The melody structure follows a symmetric pattern /each part divided equally/. The symmetric pattern of the melody comprises two sentences, each containing pairs of statements or phrases of equal length /(2+2)+(2+2)/. Each phrase comprises 2 bars, and when represented by the English alphabet, they are structured as (a+b)+(c+d), with the notes in each phrase being distinct. Considering that one stanza of the song consists of four lines, this melody accommodates the singing of two lines of lyrics. Hence, in this song, a single stanza, or a full time /referred to as a full chorus in long songs/, comprises a repeated pattern that occurs twice without any alterations, resulting in a compound pattern.

The range or volume spans one octave, extending from the lower 'la' note to the 'la' note of the first octave (notated as 'a-a^1'). This range is relatively compact, making it accessible to everyone.

The song commences with the middle chrord[20] (**Registry-chord:** A certain part of the range of a singer or musical instrument has the same methods and the same tones in terms of repetitive quality. Distinguishing by this feature is calle), ascends to the highest note during the second 'b' chord, reaches the lowest peak note in the third 'c' chord, and concludes with the initial 're' note or the middle chord. The linear rep-

[19]"Ancient Mongolian Songs from the Swedish Museum of Ethnography," published by the Mongolian State University of Arts and Culture in 2018. pp.19-20
[20]Natsagiin Jantsannorov,1996. A Glossary of Musical Theory Terminologies. p.80

resentation of the tone creates an ascending-descending-ascending (~) pattern. As for the embellishments, there is no embellishment other than the break rising by a fourth / grace note/ at the beginning of the second phrase. The music features extensive intervals between successive notes, including a descending fifth (quinta) exclusively in the third phrase 'c,' while in other instances, it employs consecutive notes and short-distance movements of thirds and fourths.

Transcription of the lyrics: [Approximate translation of the lyrics]
Upon the throne of mountains, grand and true
The perfect peak in nature's splendid view
Like Khan Garuda, dancing through the sky
Protector from dark spirits, oh so high
  When gazing from afar, a wondrous sight
  A lion and mammoth's ride and so right
  Climbing the peak through rocks and cliffs so high
  In beauty, bright and clear, beneath the sky
Champion of mountains and waters, we implore
To you, the giver of peace, we humbly adore
Bestow your rain upon the flowers so fair
A mighty mountain of fortune, hear our prayer
  Amidst the prowling tiger's fearsome lore
  And human quarrels, battles evermore
  From where sheep do roam on this earthly sphere
  Oh, move them away, bring peace and cheer.
Horses and camels, nurtured with great care
Blessed by unceasing heavens, always there
A spacious valley, wide and free it lies
Zasagt Khoshuu, may blessings ever rise
  A bounty from the five-jeweled herd so grand
  Offered to please you, as our hearts demand
  In your calm, refreshing winds, we find our mirth
  Praise to you, Ruler Bayanzurkh, our cherished Earth

In the composition of the song, the note 're' serves as the fundamental or prime note. The sequence of notes includes d, f, g, a, and c, representing the second type of the five Mongolian notes. In accordance with Mongolian musical studies, these notes exhibit a Western minor tonal tendency in their pronunciation. (Figure 2.)

Figure 2. *Note sequence of the song "Bayan Zurkh, the Great Khan of Zasagt Khosuu" (Horqin Zasagt) performed by Magsar*

Traditionally, the "Praise of Mount Bayanzurkh" is performed, accompanied by a four-stringed fiddle.

A version of this song that was performed in 1950, was included in the book "Summary of the Intangible Cultural Heritage of the Horqin Right Front Banner" (Figure. 3).

Figure 3. *The "Praise of Mount Bayanzurkh" as transcribed in the book "Summary of the Intangible Cultural Heritage of the Horqin Right Front Banner"*

Although not specifically written in the book, it follows a 4/4 time signature. Notably, in comparison to the previous version, its rhythm has been reduced by a factor of two with 4 bars /for example, a fourth is transcribed as an octave/. Structurally, it exhibits a symmetrical pattern akin to the initial version, with four lines of a stanza sung in a compound pattern. The melody, as represented in this musical notation, consists of a two-line melodic structure, with each bar representing a single phrase.

To facilitate a comparison of melodic changes, the rhythm of the original version sung in the 1930s can be scaled down by a factor of 2 and transcribed into four bars. (Figure 4).

Praise of Mount Bayanzurkh

Figure 4. *"Bayan Zurkh, the Great Khan of Zasagt Khosuu." performed by Magsar scaled down by a factor of two*

In this comparative analysis, it is evident that the melodic structure and linear motion of Version II remain unchanged from the first version. However, when considering the range, it extends from the note 'la' of the minor octave to the 're' of the second octave (a-d2), representing an expansion of a fourth, specifically, from a fourth to an eighth. This expanded form subdivides fourths into eighths and ascends to the upper tonic, potentially reflecting the performer's improvisation that elevates the highest note even further. In comparison to the first version, the primary melody notes remain consistent. However, a notable distinction emerges in the initial note of the second phrase: while it is 're,' functioning as a tonic in the first version, in the second version, it is 'fa,' the second note among the five. However, in the first version, this 'fa' note is a prominently accented note, possibly due to its syncopated rhythm. This rhythmic emphasis on 'fa' may account for the absence of the initial 're' note in the second version. The omitted note 're,' which appeared weakly at the end of the previous sentence, takes on a tonal variation known as a 'prelude,' where a note from a strong part antic-

ipates its inclusion in advance during a previous weak part. In the song, only the note preceding the end is marked with an embellishment or a mordent.

Regarding composition, there are no alterations to the type II of the five notes, which comprise the notes d, f, g, a, and c.

The version performed by singers Bayanduuren, Erdenetogtokh, and Hunstu in 2020 featured electronic music accompaniment. When we transcribed the melody from the recording into notation (Figure 5), it was notated in a 4/4 time signature with 4 bars and a symmetrical pattern. Interestingly, the first 4 bars and the subsequent 4 bars of this melody remained unchanged, resembling a compound pattern similar to versions I and II. In other words, in the notation of version III, the 2 bars marked in version I were condensed into 1 bar, effectively reducing the rhythm by a factor of 2. To align with the key signature of the 7th sharp of A sharp minor, as in the first two versions, transposing the melody to the key note of 're' tonic yields the following representation:

"Praise of Mount Bayanzurkh" performed by artists Bayanduuren, Erdenetogtokh, and Hunstu transposed to "re" or D minor.

Figure 5. "Praise of Mount Bayanzurkh" performed by artists Bayanduuren, Erdenetogtokh, and Hunstu in 2020

This version closely resembles Version II in its composition, melodic structure, range, and overall movement. The only discernible change lies in the addition of an auxiliary note in the third 'C' phrase. Consequently, in the new century, it was performed in a new manner /featuring electronic music accompaniment/, yet it has retained its core elements unchanged from renditions dating back half a century or even a century ago.

Conclusion

Folk songs, which have endured for generations, hold a distinct place as cultural heritage artifacts that leave an indelible mark on a nation's history. In this study, we analyze three renditions of the 'Praise of Mount Bayanzurkh' song, a composition with a legacy spanning over a century.

Upon studying the notes from the 1930s, it is evident that the tune was sung with a slow tempo. Subsequently, in the 1950s, the tempo doubled in speed. However, in the context of modern renditions, the song has evolved to feature a faster tempo within a 4/4 time signature, characterized by repeated notes.

The enduring constancy of the melody for a full century can be attributed to the utilization of the 'Praise of Mount Bayanzurkh' song by individuals with relatively professional backgrounds in their respective endeavors.

It can be posited that the shifting rhythm can be attributed to the evolution of modern society.

While some folk songs undergo alterations when sung by volunteer artists, leading to shifts in melody and scale due to individual compositions, it is noteworthy that the "Praise of Mount Bayanzurkh" is predominantly sung by established professional singers. This practice has contributed to its relative stability, with minimal changes observed over time.

From a research perspective, it is reasonable to infer that the absence of change and utilization of the song from 1960 to 2000 may be linked to the impact of the Cultural Revolution.

The "Praise of Mount Bayanzurkh" song holds a crucial influence in the restoration of local traditional customs among the community. It is regarded as an essential vehicle for expressing the Mongolian spirit, fostering love and care for the world, and imparting valuable lessons to the younger generation.

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CHINESE LACQUER AND CRAFTSMANSHIP WISDOM

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Abstract

Ceramics, lacquer and ink are the three traditional arts and crafts of China, which are closely related to the production and life of the Chinese people 。It has an irreplaceable historical status. Like porcelain, lacquerware is indispensable in daily life. With the transformation of industrial structure in the new era, the development of the traditional lacquer industry is facing new breakthroughs 。Traditional lacquerware urgently needs innovation and development. This article focusses on sorting out the traditional lacquer culture. Explore the development of lacquer from the perspective of history, food, clothing, housing and transportation. And demonstrate its value in modern and contemporary times. Finally, take the works of the artist Mr. Zheng Yong as an example to briefly discuss the artistic value of ceramic tire lacquerware from the perspective of aesthetics. To explore the cultural path and aesthetic interest of traditional lacquerware.

Keywords:

lacquerware; pottery lacquerware; cultural inheritance and change; artifact aesthetics.

摘要

陶瓷、大漆、水墨是中国传统三大工艺美术精品，与中国人民的生产生活息息相关，具有不可替代的历史地位。漆器与瓷器一样在日常生活中不可或缺。伴随新时期产业结构转型，传统的漆器行业发展面临新的瓶颈，迫切需要新的创新和发展。本文重点对传统漆文化进行梳理，从历史、衣食住行角度探寻大漆发展，论证其在现当代的价值，最后以艺术家郑勇老师的作品为例从美学的角度简单论述陶胎漆器的趣味美学，探析传统漆器的文化路径和审美意趣。

关键词

漆器；陶胎漆器；文化传承流变；器物美学；

中国是一个审美国度，在几千年的儒释道文化影响下，留下了高度的审美经验。孔子以"里仁"为美，孟子以"求实"为美，荀子以"不全、不粹、不足"为美；老子以"天下皆知美之为美"；庄子以"天地有大美而不言"为美。在这样的审美态势下造就了高度的器物文化，无论是先秦的铸造工艺还是宋代的五大名窑，亦或是明清家具，都给我们留下了许多工艺美术精品器物。中国古人讲求"器以载道"、"器以载美"、"格物致知"精美的器物能够窥见一个地区经济的兴旺、文化的繁荣和审美的旨趣。籍此，器物可以成为探寻古人智慧的一面镜子。

陶瓷、大漆、水墨是中国传统三大工艺美术精品，陶瓷是泥与火的艺术，一拨普通的泥土经过泥与火的交融烧制成价值连城的瓷器；一盏漆液经过不断的髹缮造就出一件件王侯贵族独享的贵器；一屡屡油烟、松烟最终研磨成墨绘制成千古绝唱的水墨精品。这就是中国古代劳动人民在平凡的材料中通过自己的无穷智慧探寻到最为珍贵的艺术珍品流传于世。在这经典的三大工艺美

术中，漆艺作为古代重要的器物在当下却鲜有人知道。

何谓大漆

大漆又名天然漆、生漆、土漆、金漆、唐漆、国漆、中国特产，故泛称中国漆。漆液主要来源于一个古老的树种——漆树。在中国24个省、500多个县市各有分布，集中分布在秦巴山区、武陵山区、大别山区等11个国家级连片特困山区。陕西、四川、云南、贵州、甘肃、湖北等6省市为生漆主产省。漆树大部分生长在中国，因此世界上用的所有生漆的原料基本上来自于中国。漆树全身是宝，能够生产漆液制作成不同的漆艺术品；漆木是重要的中草药，漆树叶可以驱蚊、做菜；漆树籽可以榨油，云南和缅甸等地有一道名菜叫"漆油鸡"就源自于漆树的漆油。但漆树本身取漆液的过程异常的漫长和痛苦，俗称要"千刀万剐"籍此，大漆也有"百里千刀一斤漆"之说，即表明大漆取之不易，又说明了漆的价值。

图1 生漆的采割过程

生漆制品在古代与陶瓷和其它贵金属一样，是非常重要的生产生活原料。其性天然、绿色。是目前世界上唯一来自绿色植物、在生物酶作用下，常温固化成膜的天然生物高分子。

籍此，李·约瑟曾经说过，漆器和"油漆"技术是中国古代的伟大发明，是"地地道道从中国传过去的整个化学最重要的根源之一（即使不是唯一重要的根源）"

有许多词语因漆而生，诸如，"漆黑一片"来形容大漆如黑夜一样，沉稳且透气；"如胶似漆"来形容某两人之间感情很好，像漆一样具有强大的粘合作用；"金无足赤漆无真"来形容大漆制品的昂贵，漆器在古代也作为贵器，为王公贵族所独享。因此大漆的制品常成为"漆黑的黄金"。

图2 浙江萧山跨湖桥遗址出土了漆弓、浙江余姚河姆渡出土木胎漆碗

漆器的发展历程

中国非物质文化遗产是中国几千年来劳动人民勤劳和智慧的结晶，在不同时代进行着传承和流变。漆器早在8000多年前就出现，浙江萧山跨湖桥遗址出土了漆弓，这是目前世界上公开所见最早的漆器实物遗存

·7000年前，浙江余姚河姆渡新石器时代遗址第三文化层的考古发现了一件木胎漆碗，给漆艺史上添了辉煌的一笔

·6000年前生漆用于陶器保护装饰，大量的漆绘彩陶罐、嵌玉高柄朱漆觚作为日用品频繁出土，大漆很大程度上发挥出了自己的性能

·5000年前基于大漆的粘连性即其"如胶似漆"的自然特质，髹漆嵌玉漆器出现，出土了大量的松石、玛瑙镶嵌的尊、罐、瓮等器物

·4000年前，夏商彩绘漆器出现，大漆与矿物质颜料结合在一起融合成不易褪色的颜料，绘制在许多器物表面。河北台西村出土的商代漆器残片就是利用大漆作为其主要原料

·3000年前的周朝，生漆被广泛用于髹饰交通工具、食器、礼器、祭器等。在出土的文物中有漆罍、漆豆等器物，代表当时漆工艺的一个生产水平

·2200年前，春秋战国彩绘漆器应用到生活的各个维度，最值得一提的是大漆也用到了兵马俑外部装饰上

·1800年前汉代生漆用到了生活中的各个方面，有食器、酒器及其他各种器物

·1500年前六朝彩绘漆器大量应用，山西大同北魏司马金龙墓出土的人物故事图漆绘屏风就是彩绘漆绘的代表

·1100年前唐代漆器髹饰技能多样，各种新技能技法相继问世，金银平脱、雕漆和螺钿镶嵌技能高深，呈现了金银平脱和螺钿漆器等价格昂贵的漆器，使得这个期间漆器的装修富丽精巧，具有鲜明的时代特点。唐代传入日本东大寺正仓院的螺钿器及"唐-螺钿紫檀五弦琵琶"都成为这个时期最为经典的艺术作品

·800年前宋代漆器简约化素髹漆器盛行，拥有"海棠式素髹漆碗"、"黑漆钵"等一大批经典的简约素髹漆器

·700年前元代出现了软螺钿镶嵌漆器，雕漆名匠辈出，出现了大量的经典的雕漆。明清时期漆器最大的特点就是将两种或多种髹饰技法结合在一起，突破了单一技法的装饰，使漆器更加绚丽生辉，光彩夺目，中国漆器发展到"千文万华"的全盛时期。从历史溯源上看，在很长一个历史时期，大漆发挥着重要的作用，应用在生活中的各个维度。现代漆器也是重要的艺术表现媒介之一，但基于其功能性弱化并已经向艺术性转化，使得现代漆器有无用之用之美。不同国家漆器也以不同的形式存在，日本的近代漆器，表现内容丰富多彩，表现手法也有许多创新。他们的漆器中既有能反映精致细腻的民族特点的元素，又有能反映时代特点的简洁、流畅、明快的与时代合拍的元素。日本拥有大批从事漆艺创作的艺术家和制作漆器的工匠，艺术家和工匠之间没有明显的界限，制作出了许多经典的漆器作品。韩国漆器作为"韩国之光"走进寻常韩民生活之中，自现代社会以来,韩国漆艺跻身世界前列，漆艺质量"青出于蓝而胜于蓝"，走在中国前头。韩国现代漆艺在民用中追求至善，在时尚中传达至美,在宗教中寻觅至静,在自然中演绎精细,在创新中达到极致。不管漆器以一个什么形式出现，或者以一个什么样式呈现，大漆作为重要的材料，亘古至今都扮演着重要的角色。

图3.唐-螺钿紫檀五弦琵琶

漆的日用

　　　　纵观漆艺的发展轨迹，大漆在现代社会的衣食住行用中发挥着重要的作用。古代大漆就用在服饰文化当中，当时人们流行穿漆纱又称为"纚"（lì x）縰"，其结构为内部由丝、麻等物编织，再于表面髹漆而成，是古代一种较高级的材质。《释名·释首饰》："纚以韬发者也，以纚为之，因以为名"。中国古代人们常用的乌纱帽也用大漆作为原料。纱帽起初是用藤编织，以草茎为里，纱为表，再涂上漆。后来就作为官员用的乌纱帽。在餐饮中，除了我们熟知的大漆餐具以外，许多漆原料制作出来的佳肴美味也是让人过嘴难忘。现代漆材料不仅仅用在建筑材料上，现代家居设计中也有大量的大漆装饰，甘而可先生设计"大天地" 红金斑菠萝漆碳纤维椅，是传统工艺与现代家具融合的典型代表。日本与荷兰著名自行车制造商分别采用大漆技艺打造的两款全球仅限量款山地车，利用大漆作为装饰，外形非常个性化。在汽车行业大漆也是现代亲睐的环保装饰材料，宝马、奔弛汽车都利用漆材料制作了限量款汽车内饰的装饰，2019款新一代丰田埃尔法蒙娜丽莎墨麟行政四座商务车内饰装饰就是利用漆材料髹饰，让传统的漆艺效果与汽车相显益彰，具有很好的外观效果。此外，大漆的装饰技法与卡地亚珠宝、威图手机、都彭打火机、梵克雅宝、肖邦、派克等品牌合作制作了许多高端的奢侈品。生漆同样被广泛应用在现代工业的许多领域，诸如，石油化工设备防腐、油舱油罐、石油化工设备；电子部件保护材料、离子选择性电极、印刷电路板用导电材料等。生漆还广泛应用在国防工业，古代文献记载：漆可御寇，饰为武器。先秦歌谣曰："从其有皮，丹漆若何？" 抗日战争期间，生漆被用于航空军用飞机造船工业以保护舰艇船体，抗海生物附着，提高航速。

　　　　生漆无论是在古代还是在现代都扮演着非常重要的角色，由于时代的变迁，其社会角色发生了改变，但其自然、环保、高分子等优良性能在现代社会依然扮演着重要的作用。生漆文化是东方的，但更是世界的文化遗产。生漆作为一种材料，无论从发展绿色化学的角度，还是从生漆与人类源远流长的文化关系考虑，必将会延伸到遥远的未来，而且会比今天更重要。

图4.乌纱帽,"大天地"、 红金斑菠萝漆碳纤维对椅、鹿角砂红漆黑檀首饰盒
（甘而可制）

陶胎漆器的创新

大漆作为一个有文化价值和艺术价值的艺术品在现代社会被很多人通过不同的物化形式表现出来，天津工业大学郑勇老师团队创新的"陶胎漆器"在国内颇有名望，团队历时5年科研攻关，复原中国古典"陶胎漆器"绝技，完成百余件作品，成为当今中国陶胎漆艺类作品最为专业的团队。促使漆器这样的艺术式样以更多维度的形式完美的呈现出来，也是大漆技艺物化的一个很好的工艺，让人们过目难忘。

图5.郑勇作品
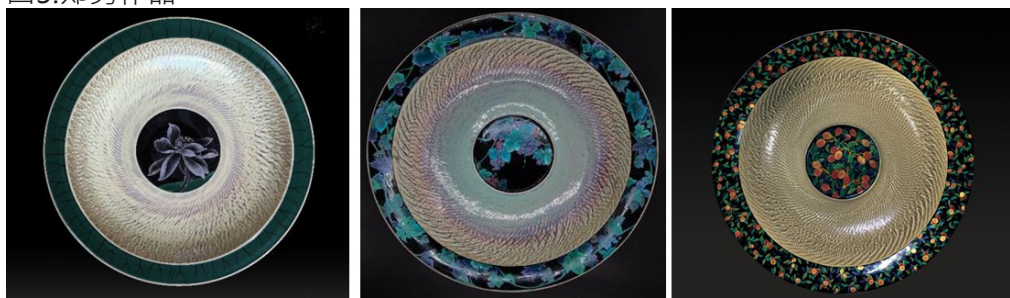
陶胎漆器，顾名思义，是由陶瓷和生漆两种材料组成。水墨、陶瓷和大漆是我们东方传统艺术的三大媒介，有着悠久的历史，代表着我们这个民族文化精神，包括我们这个民族的哲学思考。陶胎漆器将陶瓷、漆器两种材料结合在一起，通过陶瓷的可塑性和生漆的黏合性将两种介质媒介结合在一起，其具备陶瓷和漆器两种工艺特征，但将两者结合的技艺是该技艺的一个重难点。
首先是陶瓷胎体的烧制，胎体准备完毕以后就是大漆的髹涂。陶胎髹漆对胎体的标准度要求很高，许多胎体表面看上去较为光滑、周正，但是实际情况却容易在髹漆过程中暴露。在保证胎体较为光滑平整不变形的情况下进行烤漆。烤漆技法分很多种，通常情况下是将生漆过滤后直接髹涂在打磨好的陶胎表面，然后放置在鼓风干燥箱里烘烤。一般在200℃ ～ 250℃烘烤下就能够将生漆烤干至氧化变色，附着力也非常强。这种烤成需要 在1小时内缓慢升温。这样有利于漆分子和陶瓷分子更加缓慢地结合，从而提升生漆的附着能力。烤漆结束以后为了防止胎体冷热不均碎裂，要在窑炉环境里存放30分钟后缓慢降温，这样才有利于器表漆稳定地附着在陶胎的表面。陶胎胎体粗糙的烤一次即可，胎体较为细密的则可以二次烤漆，这样能够附着得更为牢固。此外，低温烘烤漆灰也是陶胎漆器烘烤着漆的重要方式，即先上生漆然后撒灰再烘烤，这都是常用的陶胎髹漆之前烤漆的技法。

烤漆完毕后就进入裱布、刮灰的步骤。烤漆以后的陶胎也需要进行生漆的髹涂，一般髹涂生漆后可以选择性地裱布、刮灰，也可以直接髹涂黑漆。整体的目标是达到胎体标准，符合漆器的要求，其次在做好的胎体上进行髹漆和漆器工艺的步骤制作。整个作品历时6个月能够完成一件陶胎髹漆作品。

这个类型作品在尊古的基础上进行了不断的创新，通过两种技艺的结合展现出作品的完美状态，让这一艺术式样能够以全新的艺术样式出现在人们的视野，被广泛的认知和关注。

陶胎漆器的美学内涵

陶胎漆器是器物文化的一部分，器物这个概念，是一个非常有趣的词。首先陶胎漆器不是物，物是自然形成的，而陶胎漆器是人类创造的，即"器"。段玉载说，器乃凡器统称，器物就是人类所使用的东西。周易经当中说形而上者谓之道，形而下者谓之器，"器物"的内涵在道的意义被暗中定义。更有意思的是陶胎漆器美学隐含了"用与无用"的辩证关系:就比如说我们造一个器物是用来用的，乃人力所致，但是它器物之美是他没有用的那个部分。这时候无用，乃心性所在。所以按照这样一个理解，我们发现，器物在中国传统文人美学当中，是一个从用到形的一个变化过程。器物乃在于"用"，却在"用"中被赋予了"形"，那些体现了"形上"之"道"的器，有了独特的艺术内涵。所以很多做器物的人讲究工艺的、手创的、经验的痕迹，而"形"往往是一个人内在的心性表达，它体现的是特异的、天成的、超验的内蕴。陶胎漆器美学的生成，是从形器到道神的一脉相承。因此，陶胎漆器美学关注的核心不是"器用""制法""工艺"和"完美"，而是"趣味"，一种感性层面上体会出来的形而上的韵味。"法"与"神"，分别构成了趣味的两个层面:人对世界的巧妙控制力与以手制之物成世界之客体精神的安妥。

随着后工业社会的到来，人们开始关注许多往昔的经典在生活态美学下呈现的全新面貌和对生活产生的新的作用。在这样一个崭新的历史时期，对漆艺的创新和传承一方面结合新材料新工艺，对艺术品进行深化与提高，另一方面需要不断挖掘漆材料本身的历史价值和文化属性。让漆材料在新时代绽放新的魅力。荀子有句名言叫"玉在山而草木润，渊生珠而崖不枯。" 任何一个充满文化传承的民族一定是一个前景广阔、生机勃勃的民族，而任何一个充满创新、寻求发展与突破的传统文化一定会日新月异、长盛不衰。漆艺作为传统工艺美术经典，一直以来被广泛运用，希望在新时代这一传统工艺之"玉"，在灿烂悠久的传统文化的影响下最终成为文化自信的"宝珠"。

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STUDY OF THE RATIO OF "SHIREET ONGI" STAMP SEAL OF ANCIENT MONGOLS

(On the example of archaeological finds of tribal seals)

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Abstract:

This research work aimed to find out and define what ratios craftsmen used in the past and the present when creating the image and shape of tribal seal, which is, a valuable cultural heritage of Mongolian ethnicity by studying the sources of artifacts. 'Shireet Ongi' stamp seal is a symbol of 'the union of the sun, man, and the earth', so the ratio of the shape of this stamp seal represents 'the proper relationship between man and nature'.

When we analyze the shape and form ratio of 'Shireet Ongi' stamp seal, it represents that it used the golden ratio described in the prominent mathematician Euclid's 'Genesis of the First' written in the 3rd century BC, which means ancient Mongols, craftsmen during period from Hun Empire to Mongol Empire used golden ratio commonly in their works and creations.

Key words:

Ratio, invention, composition, beauty, perfection, ideal

Previous studies

In the forties and fifties of the 20th century, historians and archaeologists of Mongolia and Russia discovered new artifacts and many valuable monuments and rock paintings from the Paleolithic, Mesolithic, Neolithic, Bronze and Iron Ages in Mongolia, and such discoveries became the beginning of stamp seal studies.

In 1889, a Russian scientist, N.M. Yadrintsev discovered Ulaan Khad in the territory of Tariat bag, Altanbulag soum, Tuv province, and in 1891, scientist, V.V. Radlov discovered pictures of animals carved on the rocks in Hanui River and Orkhon River basins and published publicly, and these were the first studies of Mongolian rock paintings.

Academician, Kh. Perlee studied shape and form of the Mongol tribe seal within relation to the ancient writing of ancient Mongols and Altaic languages, particularly runic writing, D. Choisamba studied its legal significance to animal husbandry, A. Dorjgotov and Ts. Songino et al. studied in the legal context, J. Saruulbuyan and A. Davaasambuu studied in the context of valuable heritage and traditions of horse culture, S. Dulam studied image of stamp seal in the context of meaning and culture, P. Gantuya studied in the context of developing a method to identify horse stamps in electronic form, Sh. Dovdon studied animal stamps in the context of veterinary forensics,

and T. Battulga classified stamps according to what they are used as symbols.

Researchers from Inner Mongolia, D. Manlai and B. Vanchig studied images and symbols of stamp seal, and Galindara journal studied them within concept of animal husbandry and culture of nomads. Scientist B. Nyamaa specially studied the stamp seal belonging to royal family on the coins of Mongol Empire and created the scheme of the stamp seal of royal family. Researcher N. Batbold concluded that 'Rock paintings on the one hand are historical monuments that contain valuable information about the lives of people at that time, and on the other hand, they are works of ancient worship and cultural art' (2011:98), which expresses the need for further research from the point of view of art studies.

Shapes of the works and items made by the craftsmen from ancient times to present day from various materials such as wood, stone, glass, clay, and metal, on the one hand, are an indication of craftsman's sense of proportion, and craftsman's sense of applying the 'Golden Ratio' can be found common in creative activities of human (as concluded by Tumurbat .J, 2004:43).

Ch. Boldbaatar said, 'When analyze the imagery, painting style, design, and style used to express the idea of any image or symbol, the research of visual design aims to answer the question, 'What is being portrayed', while the research of visual style (2000:25) is aimed at finding an answer to the question, 'How it is portrayed' (2000:25), which raises the question of what ratio was used to create the shape and style of that tribal seal. Historian, E.H. Gombrich said 'We call this law, which governs all the artistic creations of entire people, a style. What is style? It is difficult to explain in words. But it is easy to see.' (2010:65), and this means that the shape and ratio of tribal seal are a combination of external representation and internal content.

'Tribal seals are important documents that testify to the ownership and migration of the tribe. On the other hand, seals are special things that attract the soul of the beholder with their mysteriousness.' (2012:143) concluded by Ts.Turbat et al., which is an indication that ratio between shape and style of the tribal seal affects human sense of sight. The research topic was chosen as because the concept of image and shape ratio of royal family stamp seals of the past and present have not been addressed in the previous works of stamp seal research.

Research methodology

When selecting the object of study from a source, we preferred a principle of reproduction by graphic representation method without changing the ratio and without distortion. (Table 1). Geometric construction of golden ratio was used in determining the ratio. (Table 2).

Research result

According to archaeologist B. Sumiyabaatar, the image and shape of 'Shireet ongi' stamp seal was hold in high regard and respected even in the 13th century or during the time of Genghis Khan. The symbol 'Shireet ongi' found on coins and seals is a combination of 'Sun, Earth, and Man' and its representation. (2020:2259) 'Ongi' has the meaning of 'prince's flag'. 'Ongi' seal consists of circular, vertical and horizontal lines. The circle is 'Sky' or 'Sun', and the horizontal line is 'Earth' or 'Etugen'.

The vertical line between 'Sun' (sky) and 'Earth' is interpreted as representing 'Man' (2020:2060), which reveals the value of shape and proportion of the seal, while expressing the unity of living world and their proper relationship.

In defining the ratio of 'Shireet Ongi' stamp seal, we sampled and analyzed following sources.

Table 1.
Sources for defining the ratio of image and shape of 'Shireet ongi' stamp seal

No.	Sources of archeological artifacts			
1	Artifact, Rashaan Rock	Artifact from Hunnu period	Artifact coin	Artifact from Erdenezuu Monastery

Table 2.
The results of defining the ratio of
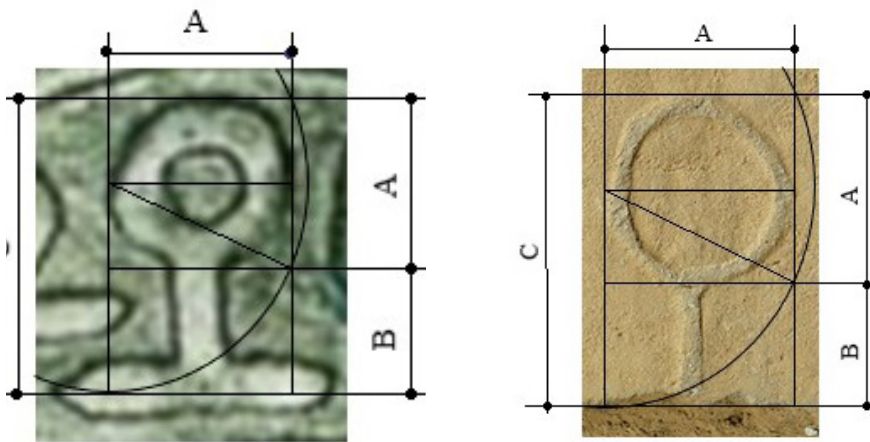"Shireet ongi" stamp seal as in archaeological findings

1. The ratio of general appearance and shape of 'Shireet ongi'[1] stamp seal found on Rashaan rock is C:A=1.618, and the ratio of components is A:C=B:A=0.618. (Picture 1).

Picture 1.
Picture 3.   Picture 2.
                                                              Picture 4.

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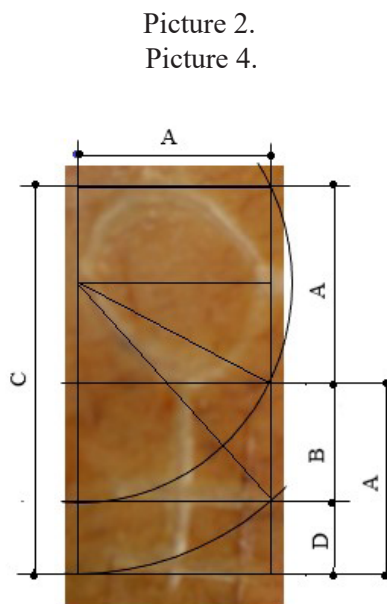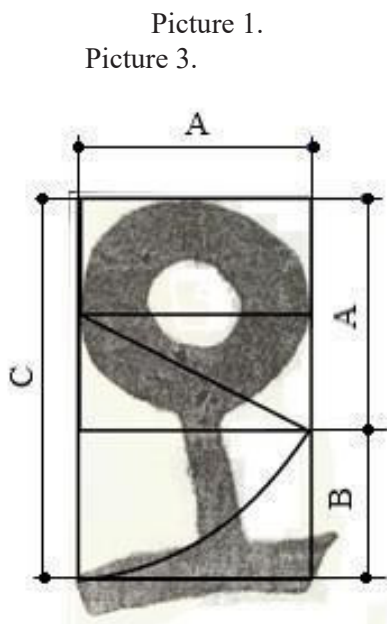
[1]Пэрлээ Х. Монгол түмний гарлыг тамгаар хайж судлах нь. УБ., 1976., х.94.

2. The ratio of overall image and shape of 'Shireet ongi'[2] seal engraved on the

knuckle-bone as archaeological find from Hunnu period is C:A=1.618, and the ratio of components is A:C=B:A=D:B=0.618. (Picture 2)

3. 'Shireet ongi'[3] seal found on a coin from Genghis Khan period has a general shape and size ratio of C:A=1.618, and the ratio of components A:C=B:A=0.618. (Picture 3)

4. The ratio of overall appearance and shape of 'Suultei ongi'[4] seal found on a brick from Kharkhorum period is C:A=1.618, and the ratio of components is A:C=B:A=0.618. (Picture 4)

A graphical representation of the compliance of shape and size ratio
of 'Shireet ongi' stamp seal with the Golden ratio:

Chart 1.

Chart 2.
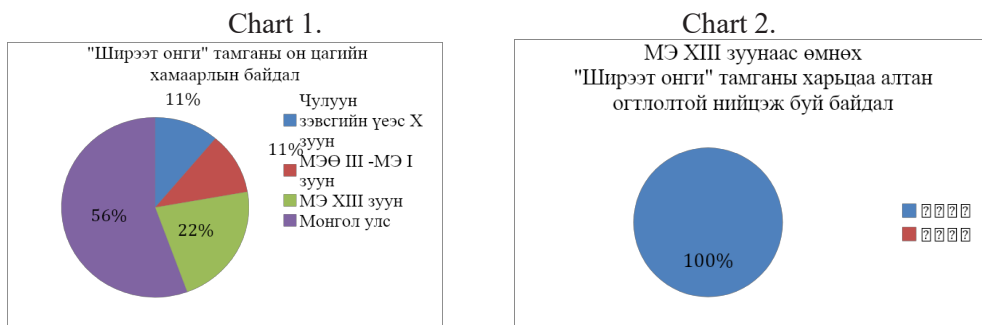
² Эрдэнэбаатар.Д, Идэрхангай.Т нар., Балгасын тал дахь Гол мод-2-ын Хүннүгийн язгууртны булшны судалгаа УБ., 2015, х.139-148

³Нямаа Б. Монголын эзэнт гүрний зоосон мөнгө, хаадын овгийн тамга. УБ., 2005., х 30

⁴ https://www.facebook.com/Kharakhorummuseum/photos/a.537291782985086/3532848860096015/?type=3

Conclusion

    1. Mongolian craftsmen had been using 'Golden Ratio' commonly in their works and activities to create the shapes and sizes of their tribal seals since BC.

    2. The ratio of 'Shireet ongi' stamp seals as archeological finds dating back to BC and AD corresponds to the 'Golden ratio', which is, indicating the level of its beauty. The ancient Mongols did expresssed the symbol of 'Proper relationship between man and nature' through their creations.

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ROCK-PAINTINGS AS THE ORIGINS OF SHAPES, SYMBOLS, AND IMAGES

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Abstract

In exploring the fine artworks in the rock paintings which were traditionally remained as the primary source of intellectual culture of ancient people, the study aims at investigating how rock paintings continues to be the basis of fine arts. The study mainly analyzes the ancient rock paintings in which the contents were expressed and painted in the different shapes and images by Paleolithic artists and engraved with more symbolic depiction in their developmental stages from prehistoric to Bronze Age. It also compares the rock paintings dated to the Paleolithic period with similar works in other countries. The results show that the images and ideas expressed by shapes, drawings, dots, and spots have become more symbolic in their developmental stages and the depiction of the hidden ideas have been integrated in the fine artworks created not only in Mongolia, but also in the world. Thus, the shapes and symbols in the ancient rock paintings that have been symbolically integrated in all types of artworks such as fine arts and handcrafts, can be considered as the basis of contemporary paintings.

Introduction

The images and symbols in the rock paintings found in the territory of Mongolia, dated to the Stone Age simply expressed how ancient people perceived the world, showed their artistic imagination about their perceptions and understanding. By examining the distinctive differences in the types of forms, shapes, and symbols expressed in the rock paintings and the ways of engraving them, it can be seen that rock paintings are the basis of contemporary paintings.

The various forms of shapes, imageries, drawings, spots, dots and patterns painted and inscribed in the rocks and monuments are considered as the fine artwork created by ancient people and their intellectual cultural heritage.

Literature Review

Tsultem, N (1988) mentioned that the Paleolithic artists expressed how people of that period used to pay their attention to the world life, death, and other complicated problems and also used to think about organization of the universe. For instance, there are many finger marks in the petroglyphs in Northern Tsenkher cave. Also, the differences between the observable universe and the entire universe, from top to bottom were depicted by the animals. The depiction of flying deer in the deer stones that are estimated to be at least 2,700 years old and depict several images, including deer, elk, horses, human faces, and the sun, expressed the idea of combining two universes.

With respect to scholar Batchuluun, S. (2011), the real situation was directly depicted, but abstract thinking such as intellectual development and beliefs were ex-

pressed by the various kind of icons and intuitive formula, on the other hand, this, in turn, suggested that there was a circumstance where reality and abstract naturally began to exist together. Moreover, the replacement of dots, dashes, lines, crosspieces, triangle, square and oval shapes and marks representing mental actions and motions and abstract thinking, has been used in the traditional folk arts of Mongolia, as well as more symbolically kept in the patterns up to the present.

Analysis

The study analyzes the rock paintings dated to Paleolithic period, Stone and Bronze Ages. The illustrative examples are the *rock art* originating in the Paleolithic period *in Khoid Tsenkher Cave* which depicted a variety of animals on the surface of the rocks, such as ostriches, camels, lions, elephants, and buffaloes in red and light brown paints; *Bichigtiin Garam Rock Drawings* located in Bugat district, Bulgan province which are richer in narrative content and imagery than previously known rock paintings; *petroglyphs in Ikh Tengeriin Am* dated to Bronze Age and are barely visible on the rock cliffs and motifs include human figures that appear to morph into large winged birds, enclosures filled with dots, and horses traveling along trails; and a piece of petroglyphs depicting deer found in Alxa Left Banner in Alxa League in North China, Inner Mongolia in which the images reveal the social life and spiritual beliefs of the ancient clan tribes and nations that once lived on the Alxa Grassland.

The human figures and main features of animals (horns, tails, elbows, males, etc.) in the walls and ceiling of the Khoid Tsenkher had been created by using sharp-edged stones and coated with ocher and dazzle paints and a group of animals had been finger-traced in many parts. On this sense, this art confirms that figurative art is characterized by partial abstraction (Bayartur, B. 2001:21).

Picture 1. Petroglyphs in Ikh Tengeriin Am

Similarly contrasted to it, a group of animals had been depicted by many dots in the petroglyphs of Ikh Tengeriin Am which can be seen as one of the main features of fine arts belonging to Paleolithic period (Barchuluun, S. 2011:23). The representation of dots for the depictions of a group of animals are similarly shown in the cave rock paintings in China, America and European countries. To illustrate it more precisely, two examples are shown below.

Picture 2. Rock painting in Mandal mountain   *Picture 3. The Sistine Chapel ceiling*

From the observation of the above paintings, it is thought that not only the finger traces, but also a variety of lines and shapes had been commonly used in the ancient rock arts, for instance, as painted in the rock painting in Mandal mountain, the hut was represented by the triangle, and dots in the triangle represented the people lived in that hut.

In the Rock Paintings of Mandela Mountains, the powerful cultural symbols and icons had been used to communicate the reality and abstract thinking and retell the history, lifestyle and traditions such as the transition from hunting to herding life-ways, hunting and herding (Batchuluun, S. 2011). Agreeing with it, the depictions of The *Sistine Chapel ceiling had been created in similar ways.*

Having observed the above rock paintings dated to the Stone Age, the rock paint-ings were generally made by removing the surface of the rock, by carving, scratching, drilling, or sculpting. The markings can be dyed or painted, or enhanced through pol-ishing. This, in turn, can be understood that the paintings showed more complicated nuances of thinking and intuition and the figurative meaning which have been strongly influenced on the contemporary fine arts.

Picture 4. Winnemucca Lake petroglyph

The petroglyphs located at the Winnemucca Lake petroglyph site in North Ameri-ca, deeply carved grooves and dots forming complex design on several large limestone boulders that have been known as special for decades. In those petroglyphs, there are no people, animals or handprint symbols depicted, the petroglyph designs include a series of vertical, chain-like symbols and a number of smaller pits deeply incised with a type of hard rock scraper. Also, a variety of shapes and lines was used to represent trees, flowers and leaves. Some of the shapes may look like fish shell. It can be thought

that those petroglyphs may depict fish from the surrounding lake. Seeing from those lake petroglyphs, the fine artworks created by the people belonging to the Paleolithic period can be documented as the origin of root of contemporary fine arts.

Picture 5. Deer stone statutes in Asia and Europe
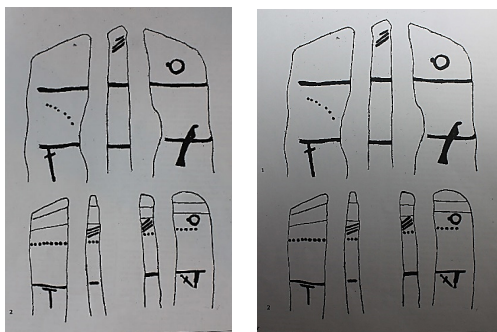
Discussion

It has been observed that the representation of real objects by dots, lines, and shapes, as well as by parts of body like as horns, tails and mane of animals in all the petroglyphs dated from Stone Age to Bronze Age have been evolved and upgraded in their developmental stages while changing the forms of depictions by using triangle, rectangular and oval marks and icons. These depiction methods have been well-elaborated and upgraded gradually, and starting from the Bronze Age, the contents of petroglyphs have become expressively symbolic and richly developed. One example of it is the paintings on Bugat deer stones. As depicted in Bugat deer stones, sun, moon, weapons and other items had been created in different ways. The methods used in the deer stone paintings are definitely related to the beliefs, deeper and symbolic meanings, and their interpretations.

In accordance with the concept of 'tenger or tengrism' developed by the ancient Mongolian people, nature has been understood as a divine, more specifically a personification of the universe, and also, human spiritual actions such as desire, ambitions, talent, and life are generally known as anthropomorphic personification concerning their worldview related shamanism. On this regard, sun and moon painted in the face part of the deer stone symbolizes the sky and the image of flying deer to the sky simply relates to the religious belief of the people.

In the rock paintings dated to Bronze Age, real images of animals were depicted by geometrical shapes such as triangle, rectangular and oval while filling in and changing the body shapes - longer body and bigger trunks of birds as particularly associated with the mythological deer (Tsultem, N. 1988:9).

Another example of abstract perception of people belonged to Bronze Age is image of horse-carts. The rock art imagery shows horses widely used to pull chariots and occupied a special place in social life and with a human consciousness due to their speed which might have caused the scarcity of cattle cart depiction in petroglyphs. This was a basis for a method of discrete image for painting front, upper and lower sides in a special place by multiple dot (Bayantur, B. 2001:22).

Picture 6. Image of horse-carts in Bronze Age

It can be seen that Mongolia has a rich history of rock paintings created by ancient people who have been applying abstract thinking of intuition in traditional fine artworks. As mentioned in the ancient historical studies, these depictions could be created in different historical periods: starting from New Stone Age through Bronze Age and finishing at the end of the 10th century BC (Batchuluun, S. 2011:30).

The artistic images created by the ancient people have been deeply adopted and integrated in the present artworks such as fine arts, handcrafts, and in all the forms of art in Mongolia and in the world as well.

Conclusion

In analyzing the research sources and documents on petroglyphs and rock paintings, the method of abstract depiction for animal representation has been changed into the forms of symbolism and intuition as decorative designs.

It has been proved that the worldview, culture, traditions and customs, and religious beliefs of ancient people had the same origin, but their artistic thinking was the result of their spiritual (inner) world development.

It can be seen that in Bronze Age, instead of intuition and symbolism, a method of discrete image was initially used in the fine artworks.

The shapes, symbols and images used in the ancient rock paintings have been adopted in not only fine arts, but also in handcrafts and in all other forms of arts while expressing the authors' ideas, figurative and symbolic meanings, so it is concluded that they are the basis of contemporary fine arts.

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LEARNING METHODS OF STUDENTS IN THE DIGITAL AGE AND TEACHER'S SKILLS

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Abstract

The digital era has brought drastic changes in the field of education, and the learning environment and learning methods are also changing, so there is raised need to improve the skills of teachers. 104 teachers were surveyed according to the learning methods of elementary school students in the digital era and the digital skills and readiness of teachers, and suggestions were made based on the results.

Key word.

Digital learner, Digital environment, Learning methodology, New style of learning

Introduction

With the intensive introduction of ICT (Information Communication Technology) into the teaching technology, new changes are being brought to the learning environment, teacher's guidance methods, students' learning methods and tools. There is a need to conduct digital training in the field of education, and training using information technology requires a lot of preparations compared with the traditional training, and further development of already developed electronic content and applications will facilitate the learning methods and activities of students. In 2022, due to the outbreak of the epidemic, many programs designed for students' independent learning have been created and used, and in the field of education, most of the programs for tablets and smartphones are aimed at improving the quality of education for students and teachers. Therefore, for our country, how do we provide a digital environment in the capital city and rural areas? How the teacher's ICT skills are trained and what the level of the students' learning methods and forms becoming an important issues.

Goal 2.1 of the "Human Development-Education" program included in the long-term policy document "Future vision 2050" initiated by the Prime Minister of Mongolia, Oyun-Erdene L., provides equal opportunities for everyone to get quality education, and education is a guarantee of personal development and the life of every family, and it is reflected that the lifelong learning system will be strengthened as a basis for the country's development. Our first steps in mastering global education are in creating a digital environment and improving the skills of teachers.

Main part

It is becoming clear that modern children will grow up in the digital era of intensive development of science and technology and live in a rapidly changing society with unpredictable future development and both opportunities and risks. ICT provides students with flexible access to materials, enabling resource materials to be used in the

classroom as well as outside the classroom. This is especially helpful for slow learners or learners with learning disabilities, and has the advantage that students can repeat the lesson as many times as they like and gain a solid understanding of the lesson. (Lim, 2014, p.18) The time of rapid development of ICT, as well as the need to educate, introduce, and empower children growing up in such an environment creates a necessary situation for a teacher to work in a digital environment.

The digital age has brought profound changes in the way children access and interact with information. With the widespread use of technology such as smartphones, tablets and computers, children are exposed to a large amount of digital content from an early age. This shift has prompted researchers to examine how these changes in technology have affected children's learning methodologys. Understanding how children learn in the digital age is critical for educators, parents, and policymakers to adapt and optimize educational strategies.

International research is underway to find out how children prefer and adapt to their learning methods in the digital age.

There are 4 main learning methodologies:

Visual

Auditory

Kinesthetic or movement

Read/write

Visual Learners: Many children today are highly visual learners thanks to digital media. Educational apps, interactive videos and animated content stimulate their visual senses. Research has shown that digital platforms can develop visual perception and visual perception by providing colorful, graphically rich, and visually stimulating learning content. (Batbold D., 2017, p199) The work of making the visual arts and technology textbooks of the elementary school of general education into an interactive format is currently being carried out at the educational evaluation center in cooperation with external researchers.

Hearing learners: Advances in podcasts, audio books, and audio technology have provided new opportunities for hearing learners. These digital resources allow children to listen and learn. Research shows that some children thrive in an environment where they can listen to audio-based learning content. We use applications such as "Chimgee reader", "Chimgee writer" and AVA for hearing impaired students.

Read/Write (R): Some variations added Read/write mode. These learners do better when information is presented in writing, such as textbooks, notes, and written assignments. They may like to take a lot of notes and read during lectures.Унших/ бичих горим нэмэгдсэн.

Kinesthetic Learners: Despite the dominance of digital screens, kinesthetic learners can find opportunities to interact with technology. Touch screen devices, interactive simulations, and virtual reality experiences provide tactile and practical learning opportunities.
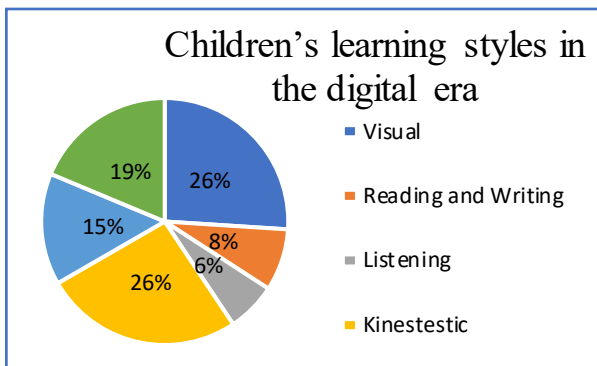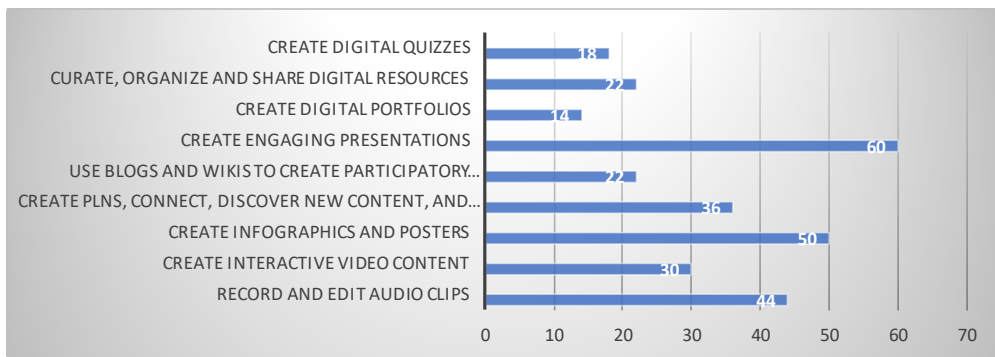
104 urban and rural primary school teachers was covered in a small survey, dedicated to clarify 9 digital skills for 21st century teachers (Education Technology and Mobile Learning, 2016, No. 12) and students' learning methodologys.

Diagram 1

Age of covered teachers

- 22-30 — 58%
- 31-40 — 25%
- 41-50 — 9%
- 51-55 — 4%
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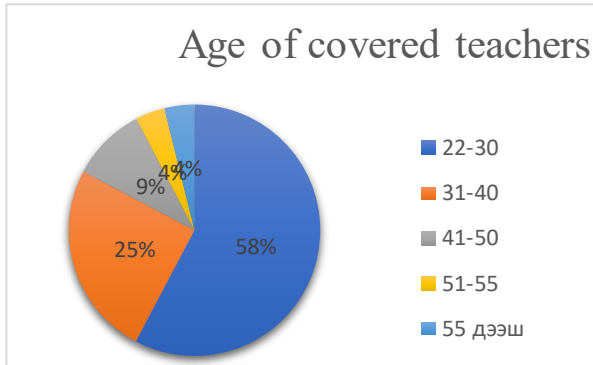
Regarding the age of the teachers who participated in the study, 58 percent are between 22-30 years old, and 25 percent are between 30-40 years old, that is, the majority are young people. According to a survey of the 9 digital skills that 21st century teachers have mastered, the ability to prepare presentations, create information graphics, and posters has a high percentage. However, the ability to create a digital portfolio and develop a digital assessment appears to be low.

- CREATE DIGITAL QUIZZES — 18
- CURATE, ORGANIZE AND SHARE DIGITAL RESOURCES — 22
- CREATE DIGITAL PORTFOLIOS — 14
- CREATE ENGAGING PRESENTATIONS — 60
- USE BLOGS AND WIKIS TO CREATE PARTICIPATORY... — 22
- CREATE PLNS, CONNECT, DISCOVER NEW CONTENT, AND... — 36
- CREATE INFOGRAPHICS AND POSTERS — 50
- CREATE INTERACTIVE VIDEO CONTENT — 30
- RECORD AND EDIT AUDIO CLIPS — 44

Children's learning styles in the digital era

- Visual — 26%
- Reading and Writing — 8%
- Listening — 6%
- Kinestestic — 26%
- 15%
- 19%

However, when looking at the study of students' learning methodology, kinesthetic and visual learning forms the majority. In the digital age, most children learn in a variety of ways. They combine different styles to suit their needs, switching between visual, auditory and kinesthetic methods as they learn. Digital platforms can provide these benefits by offering multiple content formats and interactive experiences. Many educational institutions have adopted blended learning approaches that combine traditional classroom learning with online components. This approach can create a more personalized learning experience and increase student engagement. (D.Randy Garrison 2008) In this direction, our universities have started training in the combined learning method. Open Educational Resources (OER): OER includes textbooks, videos, lesson plans,

and other openly licensed resources that make learning more accessible and affordable.

Conclusion

Education in the digital age is changing to become more flexible, accessible and personalized. Learning in the digital age is not limited to formal education, but supports and facilitates online lifelong learning, continuous skills development and adaptation to changing job requirements.

It is necessary to support the opportunity to improve the digital skills of primary school teachers through state policies and prepare a digital environment.

The study of children's learning methodologys in the digital age is an ever-evolving field. It recognizes the dynamic nature of education in an increasingly digital age. How children prefer to learn using technology is becoming increasingly important to educators and parents. As technology advances, research in this area will continue to be important in optimizing the educational experience of children in the digital age.

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