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RESEARCH ARTICLE

Mongolian medical education: the past, present and future

Ts.Lkhagvasuren¹, Kh.Altaisaikhan², T.Altantsetseg³,
O.Bolorsaikhan⁴, B.Oyungoo⁵, N.Sumberzul⁶, N.Khurelbaatar^{7*}

^{1,2,7}Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia

³Postgraduate Training Institute, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia

⁴Department of Communication Skills, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia

⁵School of Nursing, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia

⁶Graduate School, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia

*bolorsaikhan@mnums.edu.mn

ABSTRACT

The “Mongolian Medical Education: The Past, Present and Future,” a delineates the historical path of over 400 years of medical education in Mongolia, starting in the 17th century when Mamba Datsan monasteries were preparing Maaranbas (physicians). The article discusses the 50 years of socialist system beginning in 1921 and the 30 years of recent developments in the current curriculum of the undergraduate medical students. This article came to life while instilling and developing medical student training in Mongolia. Thanks to the prowess of our national scholars and professors, it is founded in Mongolian wisdom, weaving with its national culture, customs, knowledge and characteristics, based on years of our observation and experience. It is notable to emphasize the contributions this article will bring in implementing the “Balanced and Perfect ” model that couples academic training with the optional curriculum. Which teaches students and healthcare professionals, the final products of the medical school training, how to become good citizens, learn the wisdom of life with academic training based on the motto; “When one masters human knowledge, teach him knowledge from articles”.

While Mongolian Medical Education Studies (MMES) are similar to those found throughout the world, an effort has been made here to show a few unique characteristics as a solution to development. It is my belief that this creation, by MMES scholars and professions, will be a useful tool in other countries, particularly those with similarities to Mongolia in the Asia Pacific Region, for medical schools, universities and Health organizations. This article was created by experienced professors of the Medical school from various medical backgrounds who were passionate about MMES. I would like to express my deepest gratitude to the scholars and professors in student training whose object was to share their developments and achievements with the rest of the world in this article on MMES. It is a benevolent action to share with others the things valued since we are learning from the world.

Introduction

The ancient traditional system of medicine and medical education has a long history of several hundred years, whereas it has been merely 80 years since modern medical education developed in Mongolia. Beginning in the 17th century when Mongolia was under the rule of Manchu Qing dynasty and had suffered for over 220 years, a Mongolian traditional medical school named Mamba Datsan was founded and has been developing ever since. In 1911 the National liberation movement abolished Manchu ruling and the nation stepped onto the path towards independence. As Manchu Qing dynasty laws and rules were abandoned, Manchu Tibetan script fell out of use and monasteries were closed down, the country's shift into a new system caused the old system of medical education to be demolished and altered.

In 1921 People's revolution won in Mongolia, feudalism was abolished and Soviet style culture started flourishing. Overcoming obstacles is a difficult and a time consuming challenge while transitioning from an old system to a new one. Through the relations built with the USSR, the first steps were built for European Medicine and the European Medical Education [EME] system started to pervade. In specific, preparation of junior physicians and nurses commenced in Mongolia.

In 1942 the government of the Mongolian People's Republic made the historically pivotal decision to found National University of Mongolia (NUM) with three faculties including Faculty of Medicine. Initially the Faculty of Medicine had a shortage of teaching staffs, textbooks, laboratories and other resources, but thanks to the

contributions made by Russian teachers the Medical Institute of Mongolia (MIM) of became an integral part of the curriculum. This is how the contemporary medical education system developed in Mongolia since 1942 until 2022. By starting to select and train the first graduates as the teaching human resource base by 1942-1961, the faculty of medicine stood on its feet as an independent Medical Institute of Mongolia. At that time Russian style curriculum for preparing physicians was still being used until 1990. In 1990, the Medical Institute of Mongolia expanded and became the Medical University of Mongolia (MUM). From the founding of NUM and until mid 1990s, MUM single handedly fulfilled the role of preparing generations of medical doctors in the healthcare system in Mongolia.

Since 1990, countries have started viewing the system of Medical education for medical doctors from a different angle. The World Federation of Medical Education (WFME) started unifying medical education and scholars and professors of Mongolian Medical University were provided with an opportunity to receive new information of medical education. At this time in our country there were no professors who were trained in the research field of Medical Education and only a handful of professors who were in charge of educational activities brought this issue to the public attention. Seeing the global progress of the Medical education perspective in developed countries opened the eyes of many and together we led by professor Ts.Lkhagvasuren and G.Jambaa determined it to be part of our own path. Fascinated by the learning about the medical education, many of our teachers are more interested in the

Medical education than their own trained specialty. During this period nearly all of our teachers became scholars for medical education. In 1997 the Tempus Tasis project of the European Union, titled "The development of the curriculum for undergraduate medical students" was approved. With the help of project financing, while collaborating with University of Leeds in the United Kingdom of Great Britain and Northern Ireland and University of Groningen in the Netherlands, the Tempus Tasis project was successfully completed. Numerous teachers went to those universities to witness teaching in person and gathered a plethora of new knowledge and experience. Many of us collaborated to combine these new methods with our own Mongolian style into permanent changes of our curriculum. It was a peak period of our work with a wonderful memory of everyone contributing their best. By the year 2000 we had renewed and refined our curriculum for undergraduate medical students. It was a historically resolute decision to start training procedure by new curriculum for undergraduate students who were admitted between 2001-2002.

The work of combining the new methods with the Mongolian traditional characteristic was the large results of our teachers and professors' diligent labor. Changes to coursework, included selection of subjects during the six year-period, volume and order of basic subjects, preclinical and specialty courses. Changes to clinical work included, learning form, methodology, teaching technology, methods to evaluate students' knowledge, hands-on practice execution, training of students in clinical practice and summer clinical practice. Each and every item

concerning teaching methodology was standardized. It is impossible to not be proud of my colleagues who achieved this much work. By this meticulous yet colossal labor knowledge, skills, habits and attitude of all medical doctors, who are providing nationwide medical service, will be defined. Such an endeavor to protect a Mongolian people's health is bound to be realized. This means responsible and reputable work of curriculum planning and methodology to train a physician was finalized. After having the renewed curriculum evaluated by Mongolian National Accreditation Committee, the Association for Medical Education of the Asia Pacific Region made the decision to accredit the Medical curriculum for undergraduate medical students of our university making it the first Mongolian university to be successfully accredited by international professional experts. We were eager to have completed this grand work and through the achievements hoped to have made a few steps ahead, yet by the present time obligation, new goals continued flowing in. Having lead the initiative work of medical education studies in Mongolia, directing the scholarly dissertation of my professor, as one who deeply cares about our University teaching and education work, though we were focussing sufficiently on our students' academic training, the realization that we had not done enough work on preparing good and responsible citizens. Although we were focusing sufficiently on our student's academic training, we came to the realization that we had not done enough work preparing good and responsible citizens. Having lead the initial research work of Medical education in Mongolia, directed the scholarly dissertations

of our teachers and as one who cares deeply about university teaching and education work I felt the need to address this issue.

Therefore, starting in 2018, beside the academic training of our undergraduate students, we resolved to create an optional programme to teach the wisdom of living, pictured by square, namely “Balanced and Whole” model. We articulated before the learning triangle in a broader sense. It is not just a typical learning triangle: student – teacher – learning task. It is triangle inside the square which represents the idea that students should become a human first to get skilled in academic training. Be a Human first and a Physician second.

Enhancements in medical education have been diligently pursued by drawing upon the rich wisdom and accumulated experiences of Mongolian professors spanning a century. It is a valuable resource collected by our scientists and professors. While this model is designed to develop students into good citizens and parents, it also paid special attention on teaching Mongolian traditions, culture, and customs. Academic knowledge should be thought to those who are accomplished in “art” of being a human. And it is a particular COMMITMENT for medical students.

We are confident that the principles of training a students and a human, “physician human,” founded in the Mongolian tradition will contribute to the medical education in countries developing in similar social, political and economic circumstances. Since we always learn from our world, we dedicate this work to our fellow healthcare professionals, medical educators at medical universities that are preparing physicians and humans, in

accordance with a Mongolian’s principle to share our experience with the teachers and professors of Medical schools in the world.

1. The establishment and development of medical education in Mongolia

1.1. THE ESTABLISHMENT AND DEVELOPMENT OF MEDICAL EDUCATION IN MONGOLIA (UNTIL 1921)

The history of the emergence and development of medical education in Mongolia includes a historical process that represents the unity of two relatively different systems of educational and medical development of Health sector of in Mongolia. This section therefore seeks to highlight the historical periodization of Mongolian medical education based on the historical periodization of these two fields.

From the medical history of Mongolia, academician Ts.Haidav has chronicled the history of traditional Mongolian medicine as follows. These include:

1. Ancient Mongolian religious shamanic worship period
2. Early days of Mongolian medicine
3. The collapse of Mongolian shamanism
4. The rise of Indian and Tibetan medicine in Mongolia
5. The development period of Russian (European) medicine
6. The development of modern medicine (Ts.Khaidav, 1997) is divided into 6 phases based on the characteristics of the medical ideas that prevailed in historical periods.

It should be noted that the theoretical and methodological concept of periodization of

Mongolian history has been rapidly updated in recent years, but it can become an important basis for the re-systematization of the history of Mongolian medical education.

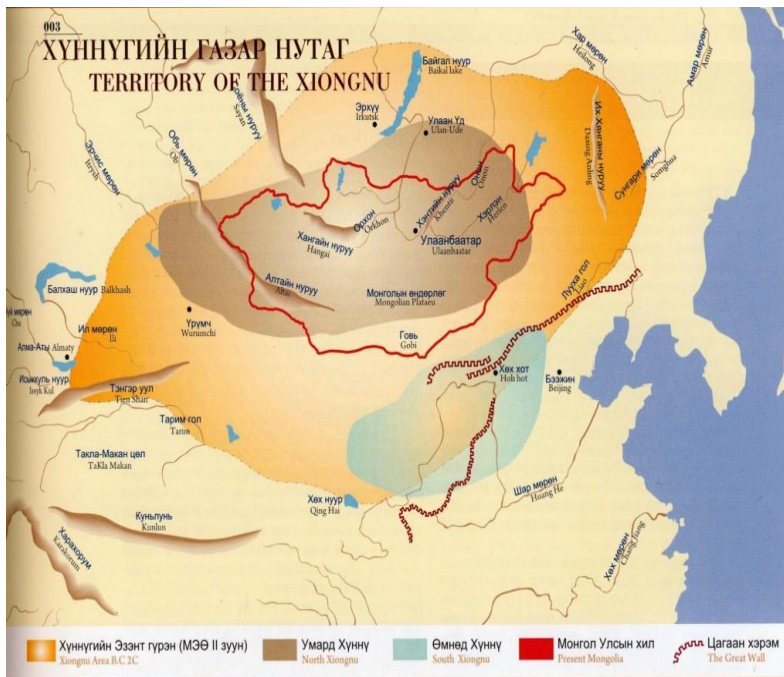
The history of medical education in Mongolia is studied periodically by medical education researcher and academician Ts.Lkhagvasuren, Dr S.Oldokh (Ts.Lkhagvasuren, 2011). In this study of the history of the development of medical education in Mongolia, they classified it into 6 historical stages that are inextricably linked with the history of the development of medicine. These include:

1. **I -period: From the age of the Xiognu Empire until the 16th century** (healing, knowing, learning the art of healing)
2. **II -period: From the 16th century until the mid-19th century** (development period of Eastern medicine)
3. **III -period: From the mid-19th century until 1921** (development period of medical practice and discipleship)
4. **IV -period: From 1921 to 1942** (period of Western medicine entering the foundation of Eastern medicine and the beginning of training nurse practitioners)
5. **V -period: From 1942 to 1990** (period of national medical training by university)
6. **VI -period: From 1990 to the present day** (period of transition from the Russian-style system of training medical professionals to international standards)

It is undeniable that at the height of its power as an ancient state in Mongolia, it subjugated the countries of China, Tibet, and Middle Asia, and then interacted with the civilizations of the west through the Silk Road, thus benefiting from the benefits of medical education in those countries. For example,

during the reign of Modu and his son Laoshang and grandson Guncheng Chanyu, the Xiognu Empire reached the peak of its power and became a powerful state, uniting not only the steppe nomads but also the city-states of the Tarim depression, forest-steppe hunters of Siberia and Manchuria, half-nomads of Gansu and Huhnuur (Ts.Turbat, 2006). Thus, during the early statehood period, the ancestral system of medical education was founded, which absorbed the contents of mythological, religious and medical triads.

Figure 1.1. Map of Xiongnu Empire



Source: Glossary of Mongolian history. <https://mongoltoli.mn/history/h/235>

The creation of the nascent united (Greater) Mongolia in 1206, which combined the Mongolian provinces in an extensive area, led to the rise of a vast country from Northern Baikal to the Great Wall in the south and from the Khyngan Range in the east to the Altai Mountains in the west, which had a significant impact on the Mongolian medical education system.

According to the report, many medical and medicinal terms have emerged in the Mongolian vocabulary, including "doctor" (*emch*), "nature-healer" (*otoch*), "masseur" (*bariach*), "faith-healer" (*domch*), "bone-setter" (*sharkhach*), and others, testifying to the diversification of medical knowledge at that time. Along with this, the appropriate activity of medical education was developing. For example, following the traditional Mongolian farming and nomadic life, the practice of animal husbandry, especially horses, did involve injuries like

getting kicked by horses, riding horses, and general injuries, such as falling off or getting sprained. It is not uncommon to find traumas to the human body, such as broken bones, torn flesh, trauma to the brain, bulging joints, and malformations of solid organs and insides. These kinds of injuries have been passed on from a very early age to the needs of life by specialized people called masseurs, who treat traumas (P.Delgerjargal, 2017). There is no special education system that trains masseurs, but a form that is often passed down from generation to generation, such as in the form of family-based or homeschooling. However, it is impossible to deny that there were forms of discipleship that trained "professional" masseurs, who were taught to handle and treat injuries of their horses in accordance with the nature of their duties, not just in a hereditary manner.

After the end of the 16th century, the widespread of Buddhism in Mongolia (which

was dominated by the gelugwa) played an enlightening role in the Mongolian lifestyle for some time and spread some of the achievements of Indian culture through Tibetan traditions. As part of the establishment of dozens of monasteries in Mongolia for the development of Buddhism, the establishment of a medical education order was historically carried out. Among the Buddhist scriptures, the medical works of India and Tibet occupied a very important place. Many representatives, including the First High Bogd Zanabazar, Zaya Bandid Luvsanperenlei of Khalkha, Lama Zaya Luvsandanzanjantsan, Nej Toin of Inner Mongolia, sage Luvsandambijaltsan of Urada, Zaya Bandid Namhaijamts of Oirada, and Zaya Khamba Dambadarjaa of Buryatia, preached Buddhism throughout Mongolia. It is believed that at this time the position of folk medicine among the Mongols was shrinking, but it is indisputable that in the framework of informal medical education, the daily life and heritage of ordinary citizens was preserved, and homeschooling and discipleship training continued.

In this historical period, the official system of medical education in Mongolia was based on the manba datsan of the frame monasteries in terms of organization. "Datsan" is a Tibetan word meaning school, and in places of religious concentration, there was a place for religious rituals and the education and training of monks. The manba datsans provided a systematic medical education and trained the religious-healers (*maaramba*). It can be concluded that manba datsan also served as an academic institute for the study of medicine, with a pattern of elective and advanced studies (D.Battogtokh, 2018).

In the 18th century, the main medical texts of India and Tibet were translated into the Mongolian language, which created important conditions for the spread of medical knowledge and the perfection of its educational system (Sh.Shagdar, 2009). As a result, Mongolian doctors often used earlier works as the basis for their writing. With the rapid development of this system of medical education, the creation of research works has increased, and Mongolian doctors have authored dozens of works in Tibet and Mongolia. Among them, Luvsandanzanjantsan's "Description of the Main Basics of Medicine", "Sermon on Disease Differentiation", instructions of prescriptions, Sumbe Khambo Ishbaljir's "Dew of the Mineral Springs", "Drops of the Mineral Springs that Harvested the Magic of Medicine", Duke of Uzemch Gombojav's "First Book of Important Cases", "All-helping Medicine" of Khoshgoi meiren, Dandar maaramba of Dalai Van of the Good Lord of Khalkha's "Exposition of the Four Fundamentals of Arura", "Beautiful Vintage of Arura Deciphering Lkhantav's Signal", "Bideriya Dictionary of Medical History", Dandar agramba of Chin Van of Tusheet Khan's "Footnotes of the Four Basics of the Spring Heart Eightfold Secret Charm" are famous.

Since the middle of the 16th century, Mongolian medical ideas and nursing skills have been developed by manba datsans in their own country, as well as by inviting renowned doctors and scientists from abroad and by traveling to India and Tibet to improve their skills (Ya.Ganbayar, 2006). For this reason, the concept, content, theory and methodology provided by the domestic manba datsans were directly intertwined with the medical education of India and Tibet.

The philosophical concepts of the Tibetan Buddhist tradition served as the core of medical education in Mongolia, and based on introspective research methods, knowledge of life and healing was developed in a way that greatly resembled the modern achievements of Immunology, Endocrinology and genetics based on modern biophysics, biology and psycho-sensitivity (J.Shamini, D.Jennifer, M.David, R.Lopsang, & C.Deepak, 2015). The study of Tibetan philosophy-based medicine, like Western science, is not focused primarily on what can be observed in the material world, but on sophisticated methods of internalizing the nature of experience, such as consciousness, body, health, and healing. In the Tibetan philosophical and medical tradition, the concept of “subtle body” emphasizes the substance, which is a common basis that can be attributed to both the mind and the material factor (G.Samuel & J.Johnston, 2013).

The first manba datsan in Mongolia, known as Baatar Van of the Tusheet Khan province, Luvsanchoidog monk in Magsarjav soum

which is the present-day Khutag-Undur soum of the Bulgan province, it was founded in 1585 at the foothills of the Namna Range near the north of the Selenge River, is a historical record, which can be considered the original foundation of the first manba datsan or medical school in Mongolia. If we take into account this historical fact, it can be assumed that the national medical education and School of Medicine in Mongolia date back 440 years. The lama zaya Luvsandanzanjantsan also established one of the first manba datsans in 1662 in Boorojuti, Bayanzurkh soum, Bayankhongor province. Thereafter, temples, monasteries, and manba datsans of Mongolian settlements began to be established (Sh.Bold, 2011). Manba datsans, which were preparing the core of human resources for medical care in Mongolia at that time, were established in dozens of administrative units, and 86 manba datsangs in Mongolia (Ch.Banzragch, 2004), and 34 manba datsans (Sh.Bold, 2011) in other areas were identified with the names, locations and dates of 120 datsans in total.

Figure 1.2. Manba datsan established in Ikh Khuree around the 1760s (early 20th century)



Source: 90th anniversary of the School of Nursing. UB. 2019.

Thus, in Mongolia before the 1921 national revolution, medical care, based primarily on traditional Eastern medical theories and methods, has gone down in history for several centuries, expanded and contributed to Mongolian health care. This period was a period of consolidation of the distinctive national system of medical training, which was primarily passed down through the manba datsan monastery by experienced otochs and maarambas to the younger generation through mentoring.

1.2 THE DEVELOPMENT OF WESTERN MEDICAL EDUCATION IN MONGOLIA (1921-1990)

Initially, in 1926, there were 6-month courses in European medicine from Tibetan and traditional medical practitioners, which trained 25 people. Under the military hospital, nurses, feldshers and pharmacists were trained in temporary courses from 1928, and by 1930, more than 30 mid-career personnel had been trained and graduated.

In addition to short and medium-term temporary medical courses, a 2-year nursing course was established at the Hospital (now the Central Clinical Hospital) in 1929, the first 12 nurses were graduated in 1930, 17 in 1931, 45 in 1932, 7 in 1933, and then during the 1933-1934 academic year, a 6-month temporary course was opened to train feldshers with the ability to work independently in rural areas which 10 feldshers graduated in 1934, 12 in 1935 and 14 in 1936.

According to the new party program approved by the 4th congress of the MPRP, **“Preparation of national medical personnel from within the Mongolian people through training in schools in foreign countries”**

medical professionals were invited from the USSR as well as systematically sending people to study and train at higher and secondary schools in the Soviet Union.

In Mongolia, the medical college was established in 1931, the foundation for the training of specialists such as nurses, feldshers and pharmacists was established, and by the 1960s, a system of training of personnel with secondary medical education was established. The development of the Mongolian healthcare industry in the 1920s inevitably led to the establishment of a national system of medicine that not only trained personnel abroad to meet their needs but also integrated them into national policies and trained medical professionals to meet the needs of society, which, although complex, was in line with the policies of the government at the time to protect and maintain national autonomy (J.Boldbaatar, 2003). Based on the fourteenth, fifteenth and sixteenth articles of the report of the government of Prime Minister B.Tserendorj (Policy, 2011) to the 2nd Congress of the People’s Republic of Mongolia, the congress adopted a resolution to include the training of national personnel in courses of foreign and domestic medical schools which was successfully implemented by the then Department of Public Health.

Figure 1.3. First school building of nursing classes

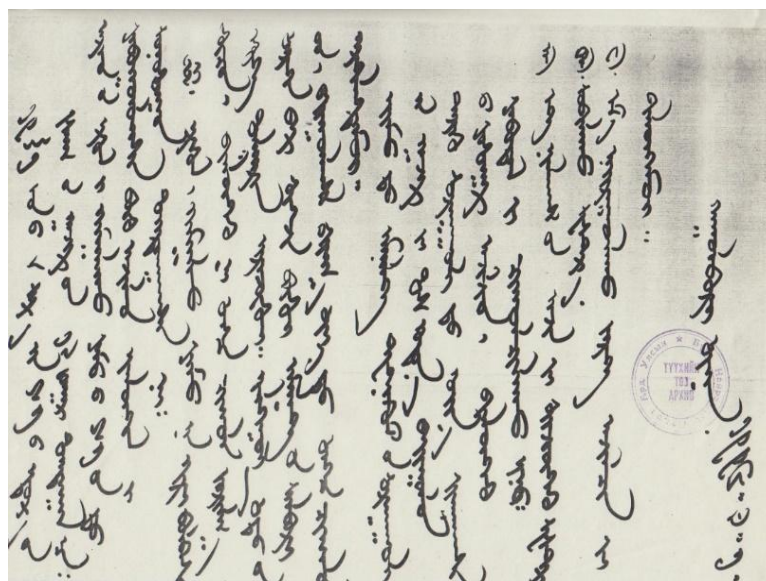


Source: 90th anniversary of the School of Nursing. UB. 2019.

On the basis of the decision of the 7th Congress of the Mongolian People's Revolutionary Party (1928), (Decisions of all congresses of the MPRP grand and minor assemblies and the Central Committee (1921-1939). Volume I, 1957) the Ministry of Health Protection established a nursing school in Ulaanbaatar on February 15th of 1929, setting

the training period for 2 years. Thus, the national medical education system was able to establish a nascent professional education system by the Western standards for training personnel in the field of public health by optimizing party and state policy decisions of the time.

Figure 1.4. The order to establish medical college



Source: 90th anniversary of the School of Nursing. UB. 2019.

The government's decree No. 17 of August 1st of 1931 consolidated nursing schools and nursing courses under military hospitals and expanded them into medical colleges, which had a significant impact on the system of training personnel in many medical specialities, not limited to nursing.

Thus, from 1921 to 1942, the Mongolian medical education system steadily shifted from the ideas, theories and methods of education in the East to the West, and at the first stage of its transition, personnel were trained in the fields of nursing, paramedic, midwife and laboratory worker. This process did not have a narrow scope of significance, which only applied to the activities of one school, but was based on decisions at the level of government, which were associated not only with the internal demands of the country but also with external political and social factors.

According to the country's demand, medical schools were established in the Dornogobi province in 1962, Gobi-Altai province in 1967, Darkhan city in 1969, and the medical college was reorganized into a Nursing school in 1985.

The 10th Congress of the MPRP convened on March 1940 and emphasized the establishment of a national higher education institution, focusing on the ever-growing need for skilled workers in the field of agriculture and culture, and on December 6th of 1940, the Council of Ministers of the People's Republic of Mongolia passed a resolution on the "Establishment of a University". The resolution states that "The development of our developing country will be resolved by the tremendous growth of all sectors, including

industry, agriculture and culture, and requires the training of national personnel, such as people with higher education, veterinarians, teachers, engineers and zootechnicians," in order to ensure such growth. According to that decision, in 1942, one of the three pillars of the founding of the National University of Mongolia (NUM) was the faculty of medicine. In summary, between 1931 and 1960, nurse training in Mongolia developed more and more, first, in terms of the material base and organizational structure, second, in terms of the quantity and quality of trained professionals, and third, in terms of teaching staff and training plans, to the extent of diversification into an independent sector of the education system. On the basis of all this, it became possible to train nurses in local schools and open a new chapter of history that continues to this day.

According to the decree of the Council of Ministers of the People's Republic of Mongolia in August of 1961, No. 431, FoM of NUM was organized as a Mongolian medical institute with 5 departments, 64 teachers and 803 students. We note with admiration that the hero of labor of Mongolia, academician B.Shirendev, academician N.Sodnom and academician D.Tsevegmed, who served as the director of the NUM, contributed immeasurably to the expansion of FoM of the NUM into an independent institute.

The early training of physicians (1942-1973) was essentially the "Mongolian version" program of medical school training in the USSR, allegedly copying the content and methodology of the courses of the Soviet medical colleges of that time.

1.3 THE DEVELOPMENT OF MODERN MEDICAL EDUCATION IN MONGOLIA (1990- till today)

On November 11th of 1990, by the 154th decree of the government of Mongolia, the Mongolian medical institute was expanded into the Mongolian medical university (MMU), thus beginning a new period of development of the institute for the training of staff with higher medical education.

It is believed that the establishment of the MMU in the new century has created favorable conditions for the training of specialists who are competent, and able to carry out active activities aimed at the community in terms of creating a healthy environment for the population and preventing disorders.

Since 1990, Mongolia, as well as the so-called socialist countries, has transitioned to a fully democratic, free-market system and established a multi-party system. Under this system, health care became self-governing and paid for by private individuals, so the responsibility for health became higher and preventive medicine became closer to global standards. As a result of the changes described above, little by little the opportunity to innovate within the professors and faculty of this university, we began to look for opportunities to bring our current MNUMS teaching policy and all activities to the standards of developed countries. The end of the 1990s can be said to be the time when medical education in Mongolia began to develop step by step in the process of developing into a full system, and the opportunities for the development of a new phase of medical education. In that sense, for the 2nd time in its 70-year history, the first

time after the launch of the Russian-style program, there was a real process of revamping and improving the medical education system.

The reform process in medical education coincided with a period in which the country's foreign relations and social psychology changed in the early 1990s when Mongolia essentially transitioned to a democratic system.

The reform of medical education was a large-scale change that began without a connection to the reform of politics in Mongolia. Instead, it started with the initiative of innovative medical scientists and teachers at our university. It is worth mentioning the names of the scientists who led this change, such as Ts. Lkhagvasuren, N. Khurelbaatar, D. Dunderdorj, Kh. Altaisaikhan, T. Altantsetseg, D. Ulziibayar, N. Sumberzul, D. Tserendagva, R. Otgonbayar, B. Oyungoo, O. Bolorsaikhan, etc.

At that time, the external relations of the university were also boosted, the opportunity to learn from the development of medical education in countries around the world, and the modernization and refinement of collective teaching began in earnest. Many of the university's operating regulations related to providing a legal framework for implementing its work with a revised and refined model have been put in place. As a result of this large-scale project, the European Union program Tempus tasis was pursued and given great importance, and since 1997, we have been working with the University of Leeds in England and the University of Groningen in the Netherlands for 5 or 6 years, and we have been working with our colleagues for a long time, the Mongolian medical education system was fundamentally reformed by 2000

and gradually shifted to a new concept, thanks to tireless efforts under that gentle climate of social reform.

We have the knowledge, skills and attitude to develop medical education in Mongolia in a way that aligns with global trends, adapts to the needs of the country's society, and provides a student-centered, problem-based training in terms of content, community, methodology, and disease prevention and wellness for the population, the following objectives have been set to achieve the goal of providing a specialist who can provide health care at the level of a general physician.

These include:

- Study the system and experience of medical education in developed countries and adapt advanced items to the unique conditions of Mongolia
- Improve the medical faculty development system
- Introduce new training methods and technologies
- Consolidate the consistency of theoretical and clinical lessons and to start clinical lessons as early as possible
- Develop the student's clinical thinking, approach to patients rather than diseases, diagnose problems and syndromes, and provide a wide range of knowledge, skills, and attitudes to solve a specific case problem comprehensively
- Maintain ethical standards for doctors and medical professionals, promote interest in research, and increase opportunities for selective learning
- Invite guest professors and organize training for teachers in the field of medical educational achievements and pedagogy

The school administration developed a physician training program to meet the job description of a general practitioner and selected a subject-specific teaching methodology and a form of examination to assess student knowledge such as developing and preparing a "clinical case" for problem-solving developing a "Objective structured clinical examination" (OSCE)/ case assessment criteria sheet, and training a "standard patient", furthermore, the school administration recommended that teachers and students should have a common understanding of the new tasks that had never been heard before, such as conducting "clinical problem-solving skills exam", and organized special training sessions for teachers periodically.

In the last 1,5 years of the internship training plan, students and trainees have been trained and implemented through clinical training in block and longitudinal training methods and have been trained in local, district and specialized hospitals. Depending on the purpose of the training, it was planned in several forms, providing relevant information to teachers and students, updating the content of the program, and co-teaching of the classes was carried out in stages according to a specific plan, which greatly encouraged the success of the training plan.

According to modern science and technology, medical development orientation, and current health sector demand, in 2003, the MMU was reorganized into the Health Sciences University of Mongolia (HSUM) and the role of the university in health, medicine, higher education and science was elevated, and in addition to the medical profession, the

training of various specialists such as health economists, health informatics, health social workers, medical research and training, the integration of the hospital services made it possible to develop into a national complex center to learn all about it.

The changes made to the training plan focus on batch time assessment, inter-course coordination, sequence optimization, and development of individual student creativity, and HSUM aims to expand and refine the scope of training to meet the standards of the countries of the western pacific region until its 2016 operational strategy. In accordance with the common requirements of the WHO, the training plans, programs, standards and assessments are continuously improved to ensure the training of highly knowledgeable, communicative, primary care and decision-making professionals, leaders and managers, and, above all, the introduction of internet, distance-learning and telemedicine to provide a wide range of knowledge and information to the students, to ensure that the teachers developed the collective and creative learning activity of the students.

The traditional training model is based on one theoretical and clinical field of medicine, the program content is more focused on the information of that science, the socio-psychological aspects of health are under-covered, the training is teacher-centered, the information is only teacher-to-student, lectures and micro-lectures predominate, the training of one model covers all students, there is almost no student participation in the planning and evaluation of the training.

The integrated curriculum model is characterized by the fact that theoretical knowledge is provided together with clinical

knowledge at the same level. The integrated curriculum model is designed to reduce duplication of subjects and content in the field, integrating the scientific content at the organ system level, acquiring clinical skills through longitudinal training from the beginning of the primary course, and expanding and increasing the level of the study content as the course progresses. The integrated curriculum has adopted the medical training strategy of SPICES+T (student-centered, problem-based, integrated, community-oriented, elective, structured, and teamwork) proposed by medical educator R.Harden of Dundee University.

The evaluation system for assessing students' skills and attitudes was conducted in traditional courses with only oral and written MCQ, clinical problems and hands-on tests, within a limited framework, regardless of the level of knowledge, skills and attitudes of students, while the implementation of the integrated curriculum led to qualitative improvements in the student evaluation system and regular research and analysis of the, the threshold to be considered to have passed the test, etc., is applied on the basis of the survey.

Thus, the university is constantly perfecting the content and methods of training with a clear policy following scientific and technological progress, social development and demand, ensuring the quality of training, and focusing its training activities on the training of doctors and professionals who are competitive and able to compete in the market.

External assessment of national and international experts conducted in the program and accreditation of the program WHO is actively providing recommendations aimed at promoting the accreditation of

medical educational institutions and the development of the health sector through the introduction of quality assurance methods in the activities of medical professionals and the medical education services in which they are trained to ensure the quality of health care globally and regionally. For example, in 2001, the regional committee of WHO for the Western Pacific adopted guidelines for the quality assurance of basic medical education at the regional level, which aimed to integrate the standards of medical education in the countries of the region through the implementation of accreditation.

This is considered to be essential to improve the skills of doctors and medical professionals by bringing them closer to the accreditation and quality standards of schools that provide medical education at the international or global level, thereby training qualified professionals to live and work in any country in the world.

In Mongolia, the university, as a leading institution of medical education, is considered the most able to achieve integration of regional and international standards. Researchers (N.Sumberzul & Sh.Oyunbileg, 2001; B.Ganbat 2002, 2004; D.Amarsaikhan, 2003, D.Tserendagva, Ts.Lkhagvasuren, D.Dungendorj, 2007, D.Otgonbayar 2010, B.Oyungoo 2010, O.Bolorsaikhan 2012) conducted several research activities in the field of medical education and made specific assessments and suggestions on the medical institution's assessment, SWOT analysis, accreditation criteria and future strategies. For example, there are many advantages for us when it comes to international integration of the institution of medical education. As a result of the adoption and implementation of

the Law on Health, Law on Higher Education and legal documents on accreditation of higher education in the last century, Mongolia has already established a system of accreditation of medical institutions and licensing of medical professionals according to international standards.

HSUM became a member of the Association for Medical Education in the Western Pacific Region (AMEWPR) in 2006, the Asia-Pacific Quality Network (APQN) in 2008, and the Asian Medical Education Association (AMEA) in 2009, which has been a major boost to the international trend and reform of medical education, the direction of science and technology development, and the current health sector demand.

In 2010, an agreement was signed with the AMEWPR to conduct an independent evaluation of the "physician" training program and the first version of its evaluation report was prepared by the team and presented at the annual meeting of the AMEWPR in South Korea. At the meeting, a team of 8 highly professional, experienced and qualified experts from 6 countries such as Australia, Japan, South Korea, the Philippines, Taiwan, and the United States was appointed to work at the School of Medicine of HSUM from October 2nd to October 7th, 2011, conducted an external evaluation of the integrated training program for basic medical education in the profession of physician.

According to the evaluation team of cross-disciplinary experts, the design, content, methodology, evaluation, and technology of the integrated training program for doctors were evaluated as a good quality program that has reached the international level.

Among the universities of Mongolia, the School of Medicine of HSUM has successfully evaluated its "Physician" training program for the first time internationally, which was a historical event that opened a new page in the field of higher education in Mongolia.

At the regional medical conference in Seoul, South Korea, on 31st May, 2012, the program received the Western Pacific Region (WPR) expert's assessment certification for the "Meeting the Global Standards of the World Federation for Medical Education" based on the results of the evaluation of the physician training program at the School of Medicine, making it the first national university in Mongolia to have its training program evaluated by international experts from both public and private universities.

The reform in the study and curriculum of medical education was the result of years of continuous work by medical education scientists. Educational researchers believe that HSUM is the university with the most opportunities for integration of regional and international standards in Mongolia, in accordance with its role as a leading institution of medical education.

It is worth saying that in 2011, the independent evaluation of the physician training program at HSUM by a team of professional experts from the AMEWPR, in a logical sense, became the basis for the next stage of accreditation of the school's training program.

Since 2014, the structure of HSUM has been updated, the name of the school has been changed and it was renamed the Mongolian National University of Medical Sciences (MNUMS).

The MNUMS receives external and national evaluations in the physician training program, and an international evaluation conducted between June 15th till June 17th, 2015, by inviting and contracting team of experts from the Groningen University. The audit concluded that the number of blocks in the program is too high, there are difficulties in assessing the student, the block order is varied, there is a lack of time for self-study and soft skills, lack of clinical practice time, and monitoring of the achievement of learning goals, especially for emergency care courses. Following this, further reform work was carried out and progress was assessed and accredited by the international accreditation authority ASIIN of the European Union between June 13th till 17th, 2016. At the International Conference on Accreditation held in Berlin, the head of the Department of Educational Policy and Management, Prof. B.Oyungoo M.D., head of Foreign Affairs, Prof. V.Enkhtuya M.D. participated and handed over their self-assessment reports. As a result of the accreditation, the first-time accreditation period was only for one year, 5 recommendations and 5 requirements were submitted and given the compliance, the "Physician" training program was accredited for a period of 5 years approved from 30th September, 2017 to 30th September, 2022. The "Physician" training program was continued by the international accreditation organization of ASIIN, with accreditation lasting 5 years, to award diplomas confirming recognition in the EU with the logo of ASIIN. As a result of the international accreditation, we started to provide diploma supplements to our graduates so our degree diploma is now recognized and accepted internationally. We have already

seen a steady increase in the employability of our graduates (O.Bolorsaikhan, 2021).

The design and training methods of the physician training program have been continuously updated according to the international medical education trend, and the direction of undergraduate training is through student-centered, competency-based and coordinated block training. This includes the development and training of comprehensive competencies that aim to acquire knowledge, skills and attitudes that combine 6 roles according to the model of CanMEDS. Graduates are acquiring not only professional knowledge and skills but also the competencies of clients, partners, organizers, health mentors, continuous learners, and professionals with knowledge, skills and inclinations. Significant progress has been made in the learning environment of the program since its initial accreditation by the ASIIN of the European Union.

One important thing that has been a long-standing dream of the entire school community was to have a university hospital, a clinical training facility for doctors, especially for students and young doctors to practice in a hospital setting. With the help of the MNUMS administration for generations, the government of Mongolia, and the government of Japan, the MNUMS acquired the "Mongolian-Japanese Hospital", which was an important and progressive historical event. Even more so, the President of the MNUMS Prof. N.Khurelbaatar-led leadership and the team have integrated the university hospital system for the first time in Mongolia, which has been a great measure of implementation of recommendations from external national and international accreditation.

It was a proud deed that our scientists were able to demonstrate in life that the complex aspects of medical training programs, technology, and faculty-student development are a process that will continue to develop in parallel with the development of the world and with the national characteristics of Mongolia.

The global pandemic situation COVID-19 has brought unprecedented changes in the quality assurance of higher education in Mongolia. However, a partial online accreditation process has begun with interviews and meetings involving evaluators and professional committees. (T.Uranchimeg & O.Bolorsaikhan, 2021).

2. Global medical education and program recognition

2.1. MEDICAL EDUCATION IN EUROPE, USA, AND ASIA PACIFIC COUNTRIES

Medical education serves as the foundation for producing competent healthcare professionals globally. Understanding the variations in the medical education system is crucial for fostering international collaboration and ensuring a high standard of healthcare worldwide. The United Kingdom, the United States of America, and Asia are significant players in medical education with some of the most renowned medical schools in the world. This report provides a comprehensive overview of medical education in these regions, including admission requirements, medical school curriculum structure, assessment, and career development programs, evaluation, and accreditation.

Medical education in Europe: A diverse Landscape

In Europe, medical education exhibits significant diversity, reflecting the varied cultural and healthcare delivery models across the continent. This section explores the structure of medical curricula in countries such as the United Kingdom, Germany, and France.

An overview of the admission process in European medical schools, including the role of standardized testing, interviews, and prerequisites.

Medical education in the United Kingdom:

Admission requirements: In the UK, students are required to complete their secondary education with a minimum of three A-levels or equivalent qualifications. In addition, students need to pass the UK Clinical Aptitude Test (UKCAT) or the Biomedical Admission Test (BMAT) to be considered for medical school. Most medical schools in the UK also require work experience in a healthcare setting.

Medical school curriculum structure: The UK medical school Curriculum is usually five years long, with the first two years focusing on the basic sciences and clinical skills. The next three years are clinical training, where students work in various hospital departments and are given patient contact. Students then have to take the final examination to qualify as a doctor.

Assessment: Medical students in the UK are assessed through a combination of written and practical exams. These exams include multiple-choice questions, essays, clinical skill assessments, and objective structured clinical examinations (OSCEs).

Degree and Career Development Programs: Upon graduation, medical students in the UK

receive a Bachelor of Medicine and Bachelor of Surgery (MBBS) degree. After completing an internship, they can pursue postgraduate training to specialize in a particular area of medicine.

Evaluation and Accreditation: Medical schools in the UK are evaluated by the General Medical Council (GMC). The GMC sets the standards for medical education and accreditation, ensuring that graduates are competent and fit to practice medicine.

Medical education in the United States of America (USA):

Medical education in the USA is highly structured and rigorous, with a focus on providing students with the knowledge and skills necessary to become competent and compassionate physicians. In this report, we will cover various aspects of medical education in the USA, including admission requirements, medical school curriculum structure, assessment, degree, career development programs, evaluation and accreditation

Admission requirements: Admission to the medical school in the US is highly competitive. Students are required to have a bachelor's degree and have completed specific prerequisite courses, such as biology, chemistry, and physics. In addition, students need to take the Medical College Admission test (MCAT).

Medical school curriculum structure: The US medical school curriculum is generally four years long. The first two years, focus on basic sciences and clinical skills, while the next two years of clinical training. Students can choose to specialize in a particular area of medicine during their clinical years.

Assessment: Medical students in the UK are assessed through a combination of written and practical exams. These exams include multiple-choice questions, essays, clinical skill assessments, and objective structured clinical examinations (OSCEs).

Degree and Career Development Programs: Upon graduation, medical students in the US receive a Doctor of Medicine (MD) degree. After completing an internship and residency, they can pursue further specialization through fellowships.

Evaluation and Accreditation: Medical Schools in the US are accredited by the Liaison Committee on Medical Education (LCME). The LCME is responsible for evaluating and accrediting medical schools in the US to ensure that they meet the required standards.

Medical education in the Asia and Pacific countries:

Medical education in Asia and Pacific countries has undergone significant changes and development over the past few decades. There are a wide variety of medical schools in in Asia and Pacific regions, each with it is own unique admission requirements, curriculum structure, assessment methods, and career development program.

Admission requirements: Admission requirements for medical schools in Asia vary depending on the country and the institution. In general, applicants are required to have completed a high school or equivalent education and have a strong academic record. In addition to academic qualifications, applicants are often required to pass an entrance exam which may include multiple choice questions, essay questions and interview. Many medical schools in Asia also

require applicants to demonstrate proficiency in the language of instruction, which is typically English.

Medical school curriculum structure: The curriculum structure for medical schools in Asia also varies depending on the country and institution. In general, medical education in Asia is modeled after the traditional Western curriculum, which includes both basic sciences and clinical training. The basic sciences curriculum typically covers subjects such as anatomy, physiology, biochemistry, microbiology, and pathology. The clinical training component of the curriculum usually includes rotations in various clinical settings, including hospitals, clinics, and community health centers.

Assessment: The assessment methods in medical education in Asia also vary depending on the country and institution. In general, assessment methods include written exams, practical exams, clinical assessments, and research projects. In some countries such as Japan and South Korea national standardized exams are used to assess medical students' knowledge and skills.

Degree and Career Development Programs: Upon completion of their medical education, graduates in Asia are awarded a medical degree, which may be either receive a Bachelor of Medicine and Bachelor of Surgery (MBBS) degree or Doctor of Medicine (MD) degree, depending on country and institution. After obtaining their Medical degree graduates are typically required to complete a residency program in their chosen specialty. In addition to residency programs, many medical schools in Asia offer career development programs, such as continuing

medical education (CME) courses and postgraduate training programs, to help medical professionals stay up-to-date with the latest developments in their fields.

Evaluation and Accreditation: The evaluation and accreditation of medical schools in Asia are typically carried out by national or regional accreditation bodies. These bodies assess medical schools based on a variety of criteria, including the quality of their curriculum, faculty, and facilities as well as their graduates' performance on national licensing exams. Accreditation is important because it ensures that medical schools meet minimum standards for quality and that their graduates are qualified to practice medicine in their perspective countries.

Medical education in Australia:

Medical education in Australia is a rigorous and comprehensive program that equips medical students with the knowledge, skills, and attitudes required to become competent medical practitioners. The medical education system in Australia is highly respected worldwide and is accredited by various medical organizations.

Admission requirements: To be admitted to a medical program in Australia, prospective students must have completed their secondary education or equivalent and must meet the minimum academic requirements for the program. Typically, students must have completed high school with strong grades in biology, chemistry, physics, and mathematics. In addition to academic requirements, applicants must demonstrate strong interpersonal and communication skills, critical thinking abilities, and an interest in the field of medicine.

Medical school curriculum structure: The medical school curriculum in Australia is structured to provide students with a thorough understanding of medical sciences, clinical skills, and professional development. The curriculum is divided into two phases: the pre-clinical phase and the clinical phase.

The pre-clinical phase covers the basic sciences, including anatomy, physiology, biochemistry, pharmacology, and pathology. Students also learn communication skills, ethics, and professionalism during this phase. The pre-clinical phase typically takes two years.

The clinical phase, which takes the remaining three years, involves clinical rotations in various medical specialties, including internal medicine, pediatrics, surgery, obstetrics, gynecology, psychiatry, and emergency medicine. Students learn to apply their knowledge of medical sciences in a clinical setting, develop patient management skills and gain practical experience in different medical disciplines.

Assessment: The assessment of medical students in Australia is rigorous and consists of both formative and summative assessments. Formative assessments are conducted throughout the course and include written assignments, practical exercises and clinical skill assessments. Summative assessments are conducted at the end of each phase and determine a student's progression to the next stage of the program. These assessments may include written and clinical exams, as well as oral presentations.

Degree and Career Development Programs: Upon completion of their medical education, graduates in Australia are awarded a medical

degree, which may be either receive a Bachelor of Medicine and Bachelor of Surgery (MBBS) degree. Graduates may then apply for registration with the Australian Health Practitioner Regulation Agency (AHPRA) and begin their internship. After completing their internship, graduates may apply for vocational training in a medical specialty, such as internal medicine, pediatrics, surgery or psychiatry.

Evaluation and Accreditation: Medical education programs in Australia are accredited by the Australian Medical Council (AMC), which ensures that the programs meet the standards for medical education in Australia. The AMC regularly evaluates medical education programs to ensure that they continue to meet the required standards. Graduates of accredited medical programs are eligible to apply for registration with the Medical Board of Australia.

3. Medical education for the 21st century at the MNUMS

3.1. RESTRUCTURING UNDERGRADUATE MEDICAL CURRICULUM OF THE MNUMS TO MEET CURRENT AND FUTURE HEALTH CARE NEEDS AND IMPLEMENTATION OF THE INTEGRATED CURRICULUM

The in the World, and it will continue to change across multiple dimensions: a different mix of patients; more ambulatory, chronic care and less acute, inpatient care; an older population; expanded insurance coverage; a team approach to care; rapid growth of subspecialty care; growing emphasis on cost-effective care; and rapid technological change. These changes demand a corresponding evolution in physician roles and training. Therefore the

traditional undergraduate medical curriculum has faced tremendous criticism during the last few decades for being fragmented and overloaded and driving students to learn by rote and attain knowledge passively instead of inquisitiveness and exploration. However, despite innovation in content and teaching methods, there has been little alteration to the basic structure of medical education since the Flexner Report sparked widespread reform in 1910. Looking to the future, medical education might evolve to include preparation for a team approach to care via practical training for multispecialty collaborative practice and preparing physicians to be leaders of primary care teams that include nonphysician providers; shorter training for some physicians via flexible pathways and "fast tracks" at each phase of training; cost-effective care in clinical practice; increased training in geriatrics; and "on ramps" and "off ramps" along the physician career path for flexible training over a lifetime. Although the challenges facing the health care system are great, meeting changing health care needs must begin at the foundation, in medical education.

Responding to the many changes in health care will not be an easy task, but it is a necessary one.

Related with these changes The President of the MNUMS, academician Ts.Lkhagvasuren MD., ScD initiated the ambitious change to restructure undergraduate medical curriculum at the MNUMS to respond to shifting population health needs such as increases in non-communicable and chronic diseases and new emerging threats in Mongolia. The University discussed many topics with medical teachers Block curriculum preparation such as

teaching methods, student centered medical education, PBL, objective structured clinical examination, preparing syllabus for students.

By the order President Ts.Lkhagvasuren of the MNUMS established a Curriculum committee. The need to inculcate substantial changes in the content of undergraduate medical curricula, as well as teaching and assessment methods, has been discussed at the Curriculum committee. The committee noted that discipline related objectives are no longer compatible with current thinking on medical education, which emphasizes integration. Health care, education for the health professions and society are dynamic process. And the committee considered that regular updating of the objectives of medical education should be ongoing process. The objectives formulated for undergraduate medical education only reflect one moment in time. It cannot be overstressed that practicing a medical profession implies a lifetime of learning. The concept of integrated curriculum has been introduced with a vision to integrate clinical training into knowledge skeleton from the inception among medical students. This involves linking theoretical teaching in basic sciences with early training in basic clinical skills such as communication, case history taking, and physical examination. These reforms in medical education "Developing a new undergraduate curriculum at the National Medical University of Mongolia" project had been underway since 1996, with financial support provided by TESIS TEMPUS and the technical support from the Leeds, Groningen, Amsterdam Universities.

The collaboration implemented a technical assistance strategy consisting of workshops, focused virtual consultations, visiting Leeds,

Groningen, Amsterdam Universities and observations the medical universities.

Curriculum committee and 25 delegates of young teachers with the President of the MNUMS visited Amsterdam and Groningen Universities in the summer 1998.

Professor Betty Meyboom-de Jong, Boumen Leonartt and Henk van Weert visited our University several times and organized workshops for medical teachers, met with block and line coordinators, teachers and students.

At the end one of their visit Prof Betty Meyboom-de Jong concluded: The MNUMS is working very hard. Would like say one example. The Department of Medical Education got a list of patient symptoms based on disease epidemiology of Mongolia and it is great admiration that the library collecting many books related with the disease epidemiology.

The professors organized a train-the-trainers approach. With the advancement of science and technology, knowledge is spreading, and society is changing. With that change, many changes are coming in the life and livelihood of the people. Changes in the curriculum thereby are assumed to be a complicated process which can be influenced by a number of factors.

The MNUMS and the curriculum committee worked to describe a general picture of the doctor. What is a doctor? And What can expected of him? There is no easy answer to these questions, because the undergraduate medical education no longer directly prepares for independent practice. Therefore we determined the "Final objective".

The final objectives presented in the following:

- General objectives
- Problems as starting points for training

General objectives

In the general objectives, the knowledge, skills and attitudes that are needed to function adequately as a doctor described. The doctor's functioning is divided into four topics: medical aspects, scientific aspects, aspects regarding society and health care system.

Problems as starting points for training

Problems as starting points for training concern problems that any doctor must be able to handle. The importance of the process of problem-oriented thinking in medicine is stressed. To be able to handle the problems, the newly qualified doctor must have attained proficiency in a number of skills and knowledge of diseases / possible diagnoses.

The curriculum committee discussed the following issues with medical teachers, graduates and students based on final objectives the restructuring undergraduate medical curriculum.

Some characteristics the undergraduate medical curriculum at the MNUMS were the following:

- Six year curriculum from high school to MD-degree
- Fully integrated education in year 2-5
- Combination of blocks and clinical line in year 2-5
- Vertical integration /early experience with patients and care
- Clerkship in year 6 in academic and hospitals
- Gradual curriculum development from H shape to Z shape
- Both new basic and clinical sciences knowledge is offered in blocks

- Blocks offer theme-wise integrated System based subject-matter following detailed educational objectives
- Clinical line offers abundant clinical cases fostering Problem based training of medical problem solving
- Previous block-knowledge is subsequently applied in the clinical line
- Blocks end with test, based on detailed objectives and prescribed reading materials
- Clinical line adds little content knowledge and prescribes no circumscribed text pages
- Presentation of patients in lecture hall with emphasis on physician cognitive behavior modelling and clinical reasoning
- Practicing patient management type problems in small groups
- Averagely 6 examinations each year
- All written exams open ended /no MCQ or T/F exams/
- Clinical examination /observation, OSCE/

The President of the MNUMS appointed Block coordinators and Line coordinator by his order and the coordinators had the tasks:

- Integrating department contributions and scheduling
- Care for integrated examinations
- General block development
- Developing clinical cases for line

The committee also introduced some facts on teachers:

- Overall student/medical teacher ratio 18 to 20 students to 1 medical teacher
- General teacher task:
 - Actual classroom teaching
 - Care for written materials
 - Course development and fine tuning after evaluation

The Block curriculum started in September 2001 with integrated blocks and line teaching. In the blocks, medical concepts like diseases and syndromes were taught together with essential elements of basic sciences such as anatomy, physiology, pathophysiology that were deemed necessary; it concerned new knowledge for the students. In the line, skills, both medical skills necessary for medical examination, laboratory tests etc., communication skills and clinical reasoning were taught, but no new knowledge. In reasoning, a patient problem or case presented with questions. The students have to find answers to the questions and to present these answers for their small group and teacher to evaluate if the student found the right answers and if all the essential data were present. As medicine changes very fast, the doctors of tomorrow have to learn to keep their knowledge and skills up-to-date. So it seems more appropriate to know how and where to find answers than to know all the answers to the questions. That means that the students have to learn to find answers to the questions posed by the teachers, to present these answers to have them checked "whether they are right and complete". Knowledge about anatomy, physiology and etc., must be taught and learned in so far it is functional to understand (causes of) medical problems and their treatments. Epidemiology, sociology and psychology are examples of sciences, that are just as important as the more traditional basic sciences. Decision making is crucial for doctors, that are functioning in places far away from the nearest hospital, but it is important for doctors in Ulaanbaatar too. From teacher centered knowledge based curriculum with

lectures in which the students were passive learners, it had to be changed to a problem based, student centered curriculum in which the student would learn to learn and become responsible for their own learning and problem solving.

Therefore the curriculum committee developed the general objectives present the knowledge, skills and professional conduct necessary to function as a good doctor. Functioning is concentrated around four themes:

1. Medical aspects
2. Scientific aspects
3. Personal aspects
4. Aspects related to society and the health care system.

Block Curriculum in undergraduate medical education addressed basic scientific knowledge in parallel with clinical science, enabling students to learn through the lens of normal and abnormal human body systems than by discipline. It was different from Traditional Medical Curriculum, where students learned the science first in the pre-clinical years and then move on to learning in a clinical setting. Most curricula for medical education have traditionally been integrated horizontally between basic sciences and clinical sciences. The goal of integration was to break down the barriers between the basic and clinical sciences. Integration aimed to promote retention of knowledge and acquisition of skills through repetitive and progressive development of concepts and their application. Vertical integration in the curriculum in addition to basic and clinical sciences, also included socio-humanistic and population health sciences.

The block courses provided students with the opportunity to acquire appropriate knowledge bases in biological and behavioral sciences, population sciences, and the mechanisms of disease. The program allowed students to achieve competence in clinical examination and effective communication skills. Students learned how to apply knowledge and skills to diagnose, treat, and prevent human disease; to understand the importance of non-biological factors that influence health in diverse populations; and to advocate for patients.

Each block is directed by an accomplished educator. Block directors also worked closely with line directors to ensure our thematic content is woven throughout each block in an organ systems-relevant manner. A wide variety of pedagogical methods has been scrutinized by our faculty and each block director carefully matches specific content to best practices delivery.

A spiral curriculum refers to frameworks where there was an early introduction to clinical skills, which increases over time and basic sciences run throughout the curriculum, decreasing over time. For example, basic sciences sessions centered on normal regulation of blood pressure were followed by clinical sessions centered on evaluation and management of hypertension.

In parallel with blocks the 3d year students started to go through clinical line teaching.

The clinical line teaching was designed to integrate basic, clinical and health system sciences. The clinical tutors were adding more active instructional methods such as problem-based learning and team-based learning to maximize student knowledge, skills, and attitudes, and reducing the hours of passive lectures.

The clinical line teaching focused on case-based problems and PBL, with group sizes ranging from 10 to 25, in almost all courses. Although conducted in different ways ranging from the problem-based to team-based learning to case method approach, all case conferences required students to prepare, collaborate, and participate. The aim was for students to work cooperatively toward the solution of clinical problems of varying complexity, with assistance from faculty facilitators, when necessary, and in so doing acquire and hone skills needed for lifelong self-directed learning.

The clinical line teaching gave an opportunity the clinical experiences and small-group discussions that enable students to develop an integrated approach to history-taking, interviewing skills, and the clinical examination. In addition to teaching knowledge and skills, the program aimed to nurture attitudes needed for respectful and compassionate interaction with patients and their families, help students to understand and appreciate the sociocultural context of illness and disease, and teach students the principles and concepts needed to deal effectively with issues and dilemmas in medical ethics.

Although all courses exposed students to clinical issues and problems in varying degrees, it is in the Introduction to Clinical Medicine program where students specifically focus on acquiring the knowledge and skills needed for effective interaction with the patient and the health care system.

As inter-disciplinary and inter-professional medicine are critically important to effective healthcare delivery and how to practice medicine in an ever changing and complex

21st century health care system the clerkships training. In the clerkship phase, 6th year students learned how to apply biomedical science knowledge and clinical skills to problems of human disease and illness in both inpatient and outpatient settings rotating through clerkships in foundational clinical disciplines. Required clerkships expose students to the gamut of medicine through Internal Medicine, Surgery, Pediatrics, Psychiatry/Neurology, Obstetrics and Gynecology, Family Medicine/Primary Care, as well as small-group case-based conferences dealing with issues of structural determinants of health, disease prevention, ethics, and professionalism. The clerkship training also focused on essential topics of health care infrastructure and delivery as well as the impact of structural determinants of health and bias on patient experiences and outcomes of disease.

3.2. THE CHALLENGES WE FACED

Curriculum reform in medical schools continues to be an ever-present and challenging activity in medical education.

Challenges and conflicts are inevitable in human interactions. While working in academic institutions, medical educationists come across conflicts and challenges, especially when leading the change in the existing structures. Medical educators face challenges of management, resources, and training in their workplaces.

Universities are well known for their professional bureaucratic nature, in particular resistance to change. This can be described as behavioral apathy, which is the tendency to preserve the existing organizational structure, even when it is clearly inefficient and unsuited to official goals. This is widespread within

universities worldwide, in the shape of a combination of organizing practices which are historically located and capriciously resistant and resilient. Behavioral apathy can affect the ability of universities to successfully change curriculum, creating resistance to any alteration of existing practices. Even if a proposed curriculum change is supported by the majority of stakeholders, there are factors that play a role in how well the change is received, implemented and maintained. Those factors are resistance against change, internal communication on change, empowerment and involvement and organizational culture. Bringing change to education curriculum requires adequate preparation and ground settings in which change can be implemented and accepted. There are a number of issues for change leaders to address and prepare before deciding to implement a curriculum change in medical education.

During the restructuring the medical curriculum we faced the some challenges such as:

- The shortage of teaching and learning resources,
- Lack of effective communication led to misalignment,
- Limited knowledge and resources for change management,
- Change-resistant culture and attitude,
- Lack of in-service training on new curriculum to teachers and staff development methods,
- The training of the heads of departments to manage the transition of the new curriculum,
- Teacher Unpreparedness,
- Insufficient English knowledge,
- Workload of teachers,
- Methods of teaching,
- Student Unpreparedness

Academic staff are unlikely to change their current practices of curriculum and course delivery unless they are communicated with effectively and convinced about the need for change and the potential outcomes of the change initiatives. Change in a curriculum requires the investment of resources, which is not a risk-free activity as staff often feel anxiety when discussing the change and development of courses.

Block curriculum introduced under pressure; ... *at the introduction of block curriculum there was a very strong resistance by the colleagues of the MNUMS and almost in each department someone was explicitly against it /Medical education department officers B.Lagshmaa, P.Tseden and others/.*

It was very clear that the staff were welcoming of the proposed changes; however, resourcing, upskilling of staff, regular communication, updating the curriculum regularly and investing during the transition years.

The nature of a curriculum review required stakeholder involvement on all levels and keeping staff informed and involved with the curriculum change project meant that staff were supportive of the change. Providing staff with the opportunities to up-skill current staff ensured that the staff were excited about learning new skills and they felt supported and less anxious about the proposed changes. In addition to this, planning ahead for adequate resourcing and the logistics of running the new program while phasing out the old meant all relevant stakeholders needed to be involved in the process and understand each other's roles better.

To overcome these challenges, the MNUMS developed a comprehensive implementation

plan that involves all stakeholders, provided adequate training and support, ensured data accuracy and quality, regularly monitored and evaluated progress, and worked to address any issues that arise during implementation.

For example: Medical teacher complained that the Family Medicine Department seems not to have developed as it should. It still is a collection of several specialists.

So, the Medical education department organized seminars, open discussion and worked with teachers to find the correct direction and solve raised problems.

From the teachers' point of view, the block curriculum increased the burden of teaching, despite the fact that the number of teaching hours did not significantly change. The feeling of increased burden was especially present among teachers of basic sciences, who have to balance their preclinical teaching obligations with clinical work.

Senior faculty members faced diverse challenges while their University decided to implement the Block integrated curriculum. The lack of a collaborative approach in curriculum planning adversely affected curriculum organization and sequencing. Lack of interdepartmental communication and collaboration and deficient faculty development programs together with the deteriorating quality of medical students were the major challenges faced by senior faculty members in implementing a new curriculum.

It was a big effort to train some seniors on new teaching methods, taking OSCE and working together in blocks. They always resisted to learn about becoming an examiner. By them they know to organize exams and it is better to teach the students as possible as much.

As for the students, the block curriculum allowed them to focus on a single subject. However, the intensity of this form of study may have induced satiation and boredom, which adversely affected the motivation for study. The sequence of courses itself affected learning and may have introduced some inequalities in studying that had not existed in the longitudinal teaching. For example, better students were allowed to choose their course rotation schedule at the beginning of each year, so they sometimes grouped in the first or in the last rotation of a course.

To meet the block curriculum objectives and to encourage students to mature as a self-learner and the teacher to become a facilitator, it was crucial to prepare the educational environment for those goals.

3.3. ACHIEVEMENTS AND LESSONS LEARNT

The restructuring undergraduate medical curriculum brought to the MNUMS many advantages: introducing variants of teaching methods, basic and clinical exams, building simulation centers, developing clinical cases, training standard patients and most importantly departments working together for future.

Adequate teacher training

A teacher plays multidimensional roles, namely being a facilitator, planner, manager, performance assessor, researcher, and mentor in addition to being a teacher.

Training the teachers was one of the important issue and the Medical Education Department had a responsibilities to lead the teachers. The Medical Education Department had multiple roles, with regard to research, teaching and learning, conduction of faculty development programs, planning & implementation of curriculum reforms,

evaluation of newer initiatives, etc., and one of the biggest achievement of the department was they played an important role in strengthening the teaching-learning, research activities, and improving the services profile of all the departments.

The Curriculum committee spent their spare time to learn Who is medical teachers, What is the teaching methos, Medical exams and etc., and bravely organized workshops and called for medical teachers for the change. Many young teachers involved into this big change process at the MNUMS.

In preparation for the Block curriculum implementation, a faculty development program under the title of teaching excellence in medical education was conducted at the MNUMS. The medical teachers were acquainted with teaching methods such as:

- Case based learning (CBL): ...
- Evidence based medicine (EBM): ...
- Problem based learning (PBL): ...
- Simulation based learning (SBL): ...
- Clinical and interactive lectures : ...
- Peer assisted learning: ...
- Observational learning: ...
- Small group teaching...
- Brain storming...

Lectures in medical education are quintessential. Didactic lecture for one hour becomes monotonous after 15-20 minutes, as there is no involvement of students. It only promotes passive learning among students. In the lecturing method, professor speaks more or less in class without interruption. Students listen to the professor's notes or copy them; then, they think about his/her words, but they do not talk to him. Ultimately, a few questions

and answers may be exchanged between students and the professor; however, these questions and answers are meant to clarify the point and are not discussed. Usually, in the traditional method, most students do not refer to more resources, including reference books, because there is no incentive to do so, and on the other hand, due to the large amount of material to be learned, the opportunity to use other resources for students is rare. The traditional method of lecture has advantages and disadvantages for both students and professors; one of the advantages of this method for professor is that in this method, only one time, in the early years of teaching, he collects the material from various books and other sources, and in the following semester, the same stuff is usually repeated; therefore, the professor only extracts the main and general material from the sources and only adds new items or removes the content in some cases. One of the advantages of this method to students is that, in this way, a large amount of content is taught to students, which, in contrast to other educational methods, is not comparable to other methods in terms of the volume of knowledge.

After the teacher training course the departments prepared interactive lectures and invited others to attend at the lectures and wished to have their opinions to improve the interactive lectures. The teachers Interactive teaching involves interchange of ideas between teachers, students and the lecture content.

The first interactive and collaborative lecture prepared by department Physiology and Neurology teachers. They introduced to integrate the subjects on "Reflex". The

departments showed that there is an immense need to move from traditional teacher focused, didactic teaching to more student focused methods that actively engage students in the learning process in order to better promote student successes and produce graduates with transferable skills in medical education there.

Small group: basic and clinical departments started to work together and developed cases to discuss. The curriculum committee considered ideal group size for small group learning is between ten and twelve people and should not be confused with a lecture to small groups. In order for the lesson to be classed as a small group learning experience it must involve three key elements: *active participation*, *'face-to-face' contact between participants*, and *purposeful activities*. When implemented with all three elements in play, the small-group context offers many benefits, and enhances students' learning experiences in many ways. For example:

- Help address gaps in student knowledge
- Encourage self-directed learning
- Allow students to engage with a range of perspectives from their peers
- Allow students to test their ideas and attitudes with their peers
- Promote a willingness for students to share their ideas
- Provide opportunities for students to give and receive feedback
- Help students to develop skills in critical thinking and problem solving
- Help students to develop communication, teamwork and leadership skills.

The teaching hours decreased by minimizing duplication of efforts. Therefore the curriculum committee directly involved the practicing educators, both administrators and instructors in successful curriculum revision processes. To prepare teachers to meet the needs of increasingly diverse student populations, assume new leadership roles, form new partnerships with communities, and transform the profession of teaching through a career-long commitment to professional development and inquiry, teacher education programs around the MNUMS were being "restructured". A common element of most restructuring proposals is a focus on the teacher's role as a reflective, inquiry-oriented decision maker, and problem solver.

It is my pleasure to express that the professors D.Ulziibayar, D.Amarsaikhan, P.Tseden, B.Laghsmaa, N.Sumberzul, D.Tserendagva and others devoted their heart to develop Medical Education in Mongolia. The devotion motivated by President of the MNUMS Ts.Lkhagvasuren who always listened us and supported all our initiatives.

Lessons learnt

Any reform process is complex. Reforms in medical education cannot be made in isolation of reforms in the health system in addition to changes being needed in organizations, their governance and roles. Also it is important to have a clear understanding of where we are now, what's on the horizon, and where we can realistically move in the near future.

The MNUMS periodically evaluated the restructuring process and tried to made a positive changes at the University. At the each meeting the departments introduced the

lessons learned at any level stages. For example:

Lesson 1: Explain the goals of the change, and share your beliefs about how to achieve the goal.

Lesson 2: Use reliable data to help set the context for the change.

Lesson 3: Focus on caring for employees as much as the department can. Treat employees with as much respect and consideration.

Lesson 4: What looks like resistance is often a lack of clarity. Make sure the vision is descriptive and perfectly clear. There is no such thing as over-communication.

4. Life skill learning model at the MNUMS, based on national values

4.1. RATIONALE TO DEVELOP LIFE SKILL LEARNING MODEL FOR MEDICAL STUDENTS

In an era characterized by globalization, continuous innovation, and the rapid advancement of smart technology, medical school graduates engage in their profession within a volatile, uncertain, and complex environment.

In our pursuit to enhance the academic training in medical education, we endeavored to assimilate advanced technologies from global sources and adapt them to our local context. Regrettably, the anticipated outcomes were not realized. After an extensive investigation, I endeavored to comprehend the root causes of this shortfall. Reports have surfaced regarding malpractice issues among recent medical graduates, and studies indicate a higher likelihood of strained relationships rather than professional errors.

In essence, it has become evident that, in preparing students for medical specialization, mastering skills such as understanding Mongolian traditional customs, embracing scientific principles, cultivating a humane disposition, gaining insights into life, and fostering a sense of patriotism are paramount. In recent years, a movement spearheaded by the Director of MNUMS, President Professor N.Khurelbaatar, and Academician Ts.Lkhagvasuren has been initiated within the realm of medical education research. This movement focuses on imparting life skills to medical students, recognizing the indispensable role these skills play in shaping successful healthcare professionals.

While steadfastly adhering to their oath to safeguard the health of the people, questions arise: How do they lead their lives, and do they find happiness? Educators have devoted special attention to a multitude of issues, including their ability to enrich their traditions, culture, and customs, as well as instill in their children values of patriotism, honesty, hard work, and creativity.

Over the course of its 80-year history, MNUMS has witnessed the development of countless students through extracurricular educational programs. Since 1961, medical graduates from the Faculty of Medicine at NUM have solemnly taken the Hippocratic Oath. Generations of our alumni have made significant contributions to healthcare and national development, and the university emphasizes instilling in them a love for their country and its people, fostering intellectualism, high ethics, and the preservation of ethical standards. In addition to their roles as deputy directors responsible for education within the school management,

they have also organized extracurricular cultural activities under the "University of Culture" framework. In addition to activities focused solely on vocational training and labor, students received scholarships equivalent to those granted to individuals with higher qualifications during that era. With a strong commitment to preparing students for both their future careers and life in general, a decision was made to implement a one-year "Hospital Attendant Practice" program for MNUMS entrants, a practice that persisted until the mid-1990s.

A block integrated training program has been introduced, marking a significant shift in the methods and technologies used to educate future doctors. This shift has highlighted the necessity for a dual approach to education, aimed at shaping citizens of the new century. Consequently, the challenging mission of elevating the quality of prior educational efforts and molding the 21st-century Mongolian citizen emerged. Adhering to the Mongolian national approach to academic education, our university's scientists and professors devised a learning model based on the principle of "transition from a triangular structure to comprehensive completeness" as follows (Figure 1).

Based on this model, non-formal education and the student development program "Learning to Live," as well as professional or medical studies, are being implemented. In addition to the training program aimed at acquiring professional skills in the "Equally Full" model, there are also social charity campaigns designed to teach the basic skills of a humane civil society. This includes academic research projects for learning

research methods, Olympiads, various projects, academic conferences, aesthetics, and physical education. The provision and development of culture, art clubs, sports sections, competitions, part-time work, internships, professional societies, and

associations to educate hardworking and creative citizens are also integral components. Furthermore, the activities of clubs and societies established by students' own initiative have gained increasing importance.

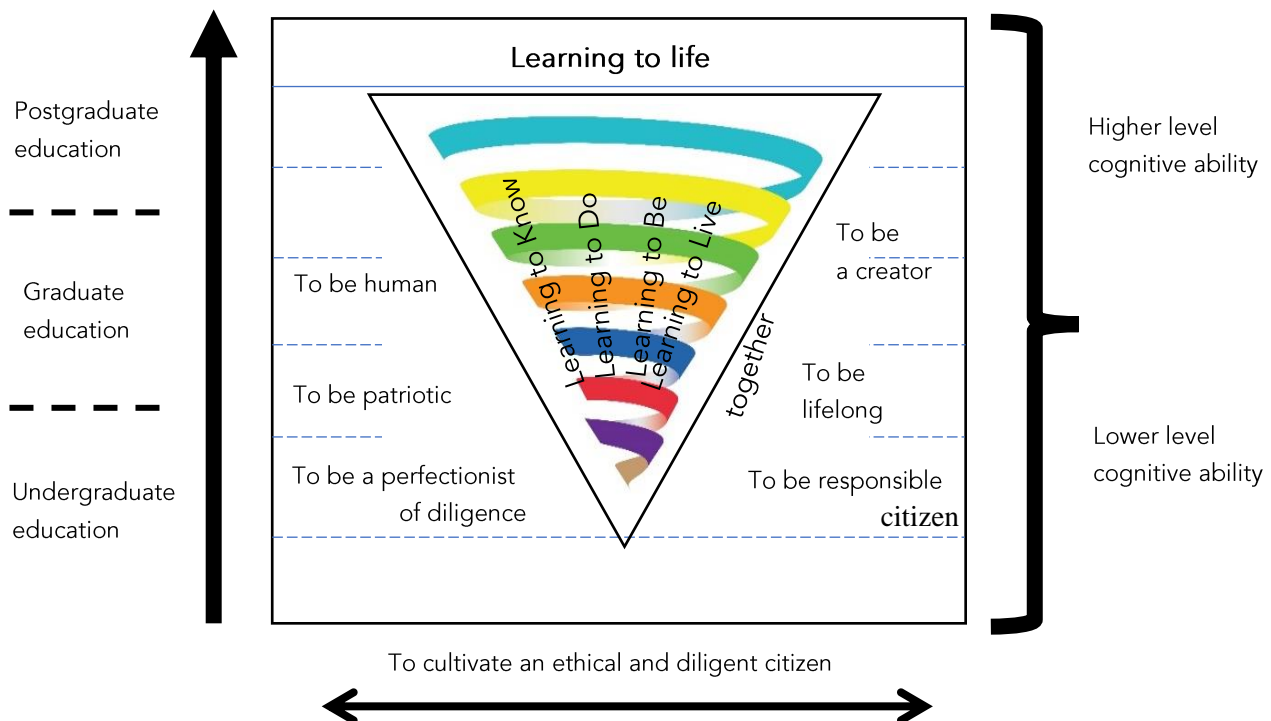


Figure 1: National Model for Studying Medicine and Life Sciences

Through this standard model, our students will not only acquire medical knowledge but also develop essential life skills. From the moment they join the university, they will learn to become patriots, exemplify good health practices, foster creativity, embrace lifelong learning, become responsible citizens, promote diligence, and prepare for parenthood. The acquisition of life skills is a lifelong journey, and this standard model will be integrated into the undergraduate, graduate, and post-graduate programs at MNUMS. The study of life sciences is a far-reaching concept that extends beyond the field of medicine, encompassing a wide range

of knowledge. A crucial aspect of our educational policy should involve providing opportunities for individuals to acquire wisdom, enlightenment, and scientific understanding.

Innovation and development encompass thinking, approaching, and living broadly. Mongolians place a high value on maintaining good health, and this commitment permeates all aspects of their work and daily lives. For instance, Mongolian people believe that their land, soil, water, environment, ecology, farming practices, homes, beds, blankets, mattresses, clothing, food, equipment, and

activities all directly impact human health, livelihood, and nature. They consider the food they consume as a form of treatment and well-being. In today's globalized world, students must receive a quality education to become competent specialists. Simultaneously, they should be well-rounded, physically fit, communicative, multi-talented, creative, hardworking, self-motivated individuals who also exhibit leadership, good health, and activeness. These are the societal expectations for them to develop into dynamic and patriotic citizens.

Within the context of societal needs and demands, higher education institutions not only impart professional education and skills to students but also play a vital role in educating, enlightening, and supporting students to become well-rounded individuals who can thrive in modern society. In recent years, the world has undertaken educational reforms, emphasizing equal development in all aspects for individuals. As the curriculum and learning environment at MNUMS continue to improve, it is crucial to enhance the social and community activities for students, providing opportunities for them to utilize their free time effectively. This includes listening to feedback, offering guidance, providing psychological counseling, and meeting their social needs. Welfare services must be incorporated, offering support and encouragement. Providing students with continuous useful information, scholarship exchange programs, improvements in education, development, and maturity, support for student employment, and the regular and active organization of activities based on student demand and needs are all essential components of this approach.

4.2. LEARNING OUTCOME OF LIFE SKILL TRAINING AND IMPLEMENTATION

The Student Development Program has been initiated to foster the holistic development of MNUMS students and young individuals, helping them to cultivate health, patriotism, respect for their native language and heritage, compassion, knowledge, positive relationships, and attitudes. The program aims to prepare them to become proficient doctors, medical specialists, and equitable citizens. Within this program, the following goals have been established:

- Instilling patriotism and confidence in MNUMS students and young people to take pride in their country.
- Teaching national traditional heritage and culture.
- Nurturing talents and fostering a friendly and positive atmosphere.
- Instructing healthy lifestyles and wisdom to support the realization of equal citizenship.

The fundamental principle of the student development program is to meld professional skills with national characteristics, culture, and education, thereby contributing to the well-rounded development and advancement of humanity.

Throughout history, the primary aim of education has been to preserve and develop the dominant cultural traditions of a society. However, in a multicultural society, there are additional goals, particularly the acceptance and respect of people from diverse cultures and backgrounds. In light of this, teachers should adhere to the following principles:

- All individuals, irrespective of their nationality, culture, or background, are

valuable. Consequently, all people, including women, children, disabled individuals, ethnic minorities, etc., are equal. Human rights and public relations should be based on equality.

- Violence is not an effective means to resolve conflicts.
- Students should be educated to recognize and respect cultural differences. This should be an integral part of the school curriculum and daily activities. Racism and intolerance often stem from ignorance and fear, and understanding and acceptance of differences are best fostered when people live, work, and play together.
- Family and community perspectives play a vital role in either supporting or hindering the promotion of respect and acceptance for others. Hence, parents and the community should be encouraged to support this endeavor.

In MNUMS's Student Development Program, with its focus on patriotism, hard work, setting a positive example, promoting health, and nurturing talent as the central directions of its activities, the approach is multifaceted. The specific methods and techniques used depend on the intended understanding and the desired behavioral changes.

Educational Tools for Student Development:

- Academic and research activities, including both long and short-term courses and seminars offered by universities and Mongolian studies, as well as other research centers.
- Programs organized by institutions dedicated to preserving the original history, heritage, and national art.
- Television programs, e-cassettes, recordings, manuals, and textbooks focusing on history, culture, and tradition.

- Competitive selections for various anniversaries and events.
- Educational activities and other initiatives aligned with the core values of student development.
- The formal educational process, which equips students with professional knowledge, attitudes, and skills.
- Educational programs designed for students, organized by the Student Development Organizing Committee.
- Sports and physical activities tailored for student gatherings.
- Museum tours, visits to celebrity halls, participation in art and cultural events, and exhibitions.
- Marketing initiatives and campaigns with a focus on national development, involving sponsors and partner organizations

Approaches of Implementation

The First Approach: A Comprehensive Horizontal Approach

In some situations, an integrated approach that weaves topic-based curriculum into various subject areas can be highly effective. For instance, the theme of 'Motherland' holds universal significance and can be seamlessly integrated into the content of multiple subjects, including history, mathematics, natural sciences, linguistics, physical education, health, and lifestyle. In practice, it is crucial to align the key themes and topics derived from the student development concepts and activities within the framework of formal education in a cohesive manner.

The Second Approach: Activity-Based Dissemination

Activities in the realms of art, culture, sports, and physical education (as well as other

options like trips, meetings, special days, etc.) are powerful means to enhance the appreciation and expression of values among young people and students. Various events can be organized to activate activities coinciding with important national and professional occasions celebrated on an annual, quarterly, monthly, or other periodic basis.

The Third Approach: Weekly or Monthly Work Method

Implementing weekly and monthly activities aligned with the given topic, tailored to the higher education curriculum level, is essential for effectively conveying student development topics. Opening and closing ceremonies for each topic, along with competitions, games, and organized activities related to it, are instrumental in elevating the level of development.

The Fourth Approach: Teacher-Centered Learning

There are programs better suited for teacher-centered learning. For instance, activities like reading and writing, following textbooks, manuals, and work plans tailored to the profession, course, and age level, are essential and may require recycling. In such cases, teachers instructing entire classes should employ active methods, such as organizing small group discussions.

The Fifth Approach: Workshops and Professional Development for Trainers

Conducting workshops for students who voluntarily train as peer educators or those selected for specific disciplines, based on the fundamental values of higher education, is a preferable approach. Short-term courses can be organized on various aspects of student development or in specific specialized areas.

A student development program goes beyond merely teaching students the values of professionalism, respect, and expression; it aims to assist program participants in living and working in accordance with these values. Given the need to address such a wide scope, student development activities can occur in various settings, including homes, schools, sports fields, churches, public spaces, and playgrounds. To achieve success, these activities must be adaptable to different cultures, as well as local values and customs. Within the program's framework, innovative, effective, and targeted activities have been organized and implemented, encompassing the promotion of young students' health, talent development, individual leadership, relationship enhancement, and enlightenment. Implementing a student development program can yield significant and tangible benefits, not only for the individual but also for their family and society as a whole. These advantages can be explained through various factors.

Individual Benefits: Successful development programs can significantly influence the values, character, and emotions of the participants. As such, student development programs emphasize life values such as respect, expression, perseverance, courage, honesty, and personal responsibility. Looking at a student's life from one perspective, it includes years of great courage when they overcome challenges to achieve their goals, serving as role models. A fundamental methodological approach in student development programs involves using stories to inspire others to follow these positive examples. Furthermore, participation in such programs enables participants to cultivate leadership skills, which can be applied

practically to develop a sense of patriotism, role modeling, hardworking character, and a healthy, talented existence.

Physical Benefits: The Student Development Program is designed to enhance participants' fitness, activity, and energy levels. Consequently, it's essential to consider the content, methodology, and organization of physical education lessons, as well as the process of sports competitions. It's worth noting that engaging in physical activities and sports not only offers physiological benefits but also contributes to overall personal development. However, it's important to recognize that the extent of these benefits depends on factors such as frequency (how often you exercise), intensity (how vigorously you exercise), duration (how long you exercise), specificity (the type of exercise you choose), and progression.

Behavioral Benefits: Participation in student development programs can lead to positive behavioral changes. This values-based approach enhances participants' sense of connection by promoting prosocial attitudes and encouraging civic engagement, such as volunteering. Encouraging students to participate in sports and engage in social philanthropy can serve as a social factor that distinguishes them from engaging in drinking, smoking, and risky behaviors (e.g., physical inactivity and other unhealthy habits).

Psychological Benefits: One of the psychological challenges students often face is a diminished ability to derive emotional pleasure from their learning activities. The psychological approach to student development aims not only to impart knowledge, develop students, and enhance their skills but also to instill a sustained

enthusiasm for learning and derive new enjoyment from it. As a result, psychological benefits of student development programs include improved self-esteem, reduced stress, and resilience against depression.

Social Benefits: Participation in student development programs fosters resilience and social skills, profoundly impacting students' lives and their interpersonal relationships. Upholding positive social norms and customs and bridging differences can have a significant influence in this regard. Thus, one of the primary objectives of the student development program is to promote understanding and social harmony among individuals and communities. On a micro-level, participants are guided to appreciate the importance of social engagement and mutual acceptance, which is particularly beneficial for those who have previously experienced challenges in social interactions.

Educational Benefits: Student development activities are designed to enrich the student's educational experience and pose educational challenges. When educational goals are effectively integrated, this program offers numerous advantages, including improved learning outcomes, enhanced student engagement in the curriculum, heightened critical thinking abilities, and a positive impact on overall learning abilities. It is already recognized that students are an invaluable source of information. They utilize their knowledge and experiences to design learning content in a non-stereotypical and personalized manner. Furthermore, the activities of student associations and clubs will be integrated, fostering multifaceted cooperation

Teaching Methods to Utilize: Educators should be acquainted with the following teaching methods to effectively conduct the exercises.

Distance Learning Methods

- **Blogging:** Given students' access to electronic information networks and their ability to engage in various activities, blogs are a useful tool for them to document their experiences during the student development program and share their insights with the public. Blogs offer versatile writing formats, from maintaining a diary to publishing articles or comments. Some blogs cater to a community and followers, while others serve as platforms for expressing personal opinions.
- **E-learning:** Leveraging information and communication technology-based training opportunities, educators can creatively use learning materials to convey fundamental values of respect and expression (such as patriotism, work ethics, role modeling, healthy living, and talent development) to students. These materials can be drawn from relevant information sources and can include highlights or various activities like video discussions.
- **Electronic Groups and Communication Methods:** The establishment of electronic groups (on platforms like Facebook and mailing lists) and electronic communication channels (chat groups, WeChat, etc.) in alignment with student development programs and educational objectives is feasible at local, national, and international levels. These electronic tools can be utilized as a means of collaboration with like-minded individuals, as well as a valuable source of information. It is essential to pay attention to

the ethical use and appropriate norms of electronic communication.

Key Classroom Teaching Methods:

1. **Electronic Presentations:** Learners use electronic methods to present their ideas and demonstrate their performance related to the learning task, making it understandable to others.
2. **Group Discussion:** This method involves dividing students into groups and having a facilitator define a problem for discussion. The key feature is that the content and questions may sometimes overlap in different sections.
3. **Debate:** Using debate as a teaching strategy develops multiple skills, including public speaking, effective listening, critical thinking, and self-confidence, which can be acquired through skillful participation in debates.
4. **Case Study:** Students may choose to delve into a specific area of the student development program or educational topic in-depth. In such cases, new knowledge and understanding can be acquired through collaborative discussions of relevant case histories, meanings, and contextual expressions.
5. **Circle Discussion:** Students are seated in a circle, and open-ended questions are posed, often focusing on a single problem that needs to be solved. A moderator guides the discussion, summarizing responses, and encouraging further discussion while noting each person's contribution to problem-solving.
6. **Guided Discussion:** Educators can employ a guide and supplementary materials (such as articles, books, blogs, websites, etc.) to deepen the student's understanding of the questions raised.

7. Jigsaw Discussion: In this method, students are divided into groups to discuss different aspects of the same problem and then reconvene to share ideas and explore solutions collectively. It is a powerful way to foster collaboration. The critical aspect is that the content and objectives of the various discussion sections should align with each other. These methods, when widely used, facilitate learning through various means like solving related problems within a short time frame, developing non-verbal communication skills through exercises, drama, and games, and employing modeling to illustrate the relationships between ideas and topics in visual forms. When using these methods, it's crucial to align them not only with the exercise's purpose and content but also to consistently consider the ideals of educational constructivism, creativity, and critical thinking. This approach will enhance the effectiveness of student development program activities in the future.

Project-based learning is an approach that can be integrated into a student development program. It's a student-centered learning method where students are assigned projects, often as part of extracurricular activities. This approach centers on specific topics, concepts, and principles, fostering student engagement in identifying real-life issues and encouraging them to learn by actively working on and creating real-life projects, drawing from their own knowledge, skills, and attitudes. To complete the projects, students must sift through information and theoretical materials, collaborate, meet deadlines, and learn resource management techniques. Project-based learning differentiates itself from problem-based learning in that it often

emphasizes the creation of models and can be more comprehensive. This approach shifts the learning dynamic from "teacher-led instruction" to "student-driven creation," with the teacher taking on a role as a sideline consultant. While the teacher may propose project ideas, students spend days or even months working as a team to plan and execute these activities. It's a problem-solving, results-oriented, active form of learning designed to address real-world issues. The primary goal is to equip students with project management skills during their studies, all while pursuing policies geared towards human development. As a result, students gain meaningful, lifelong skills, including critical thinking, teamwork, research, innovation, time management, self-motivation, practical application of knowledge, psychological resilience, and effective work techniques.

A student development program serves as a potent means to help students realize their potential in real-life situations. Therefore, having an effective method of managing and organizing activities is instrumental in supporting students' social, psychological, and cognitive development, enhancing their research accomplishments, bolstering self-confidence, and facilitating holistic mental and physical growth.

Students actively participate in the activities of the Student Union and the Student Club to enhance the reputation of MNUMS, foster personal development, promote unity, and increase social and political engagement. The Student Club at the MNUMS is a self-governing student organization with a specific structure and organization designed to enhance its members' personal development, professional skills, and social involvement based on their interests.

A new situation has arisen due to the global pandemic, marking the advent of a new historical era and a "new normal." This new mode of education is expected to bring about several changes, including:

1. The integration of online training across all levels of education.
2. Remote and online knowledge assessment, exam material preparation, and fund management.
3. The use of smartphone apps in place of traditional schools and campuses.
4. Different strategies for student recruitment and enrollment.
5. Ongoing transformation in the structure, design, and organization of universities.

For instance, students are increasingly interested in studying in various cities or countries rather than remaining in one place. Concepts like campus-less education, lower tuition fees, and personalized learning have gained traction in universities worldwide. These approaches align with the evolving demands of modern society and are continually updated to reflect the changing times.

Another notable shift in higher education is the growing interconnection of work, life, and schooling. In the 21st century, adults and individuals alike should have the ability to acquire knowledge from educational institutions, assess and validate new skills acquired in work and daily life, and create opportunities for advancing their careers and professional lives."

Top of Form

4.3. EVALUATION CRITERIA OF LIFE SKILL LEARNING

Evaluation is a multifaceted process involving multiple stakeholders. The development and

implementation of the "Student Development" program, along with its various features, can be assessed using specially designed criteria. We propose five key concepts, accompanied by a range of quantitative and qualitative indicators or criteria, which can be employed in the evaluation and monitoring process

1. Vision, goals and objectives (Goals and desired results are defined very precisely)

➤ The program will be coherent and compatible with the vision of the school and organization

➤ Evaluation and norms of the level of development, knowledge, skills and psychological characteristics of newly enrolled students

➤ Learning outcomes that describe the life skills, attitudes, and values students are expected to possess upon graduation,

➤ Planned results that are clear and clearly written to give the same understanding to students, teachers and management,

➤ Planned results to achieve effective goals and objectives by which students' success can be evaluated,

➤ Required participation of all stakeholders in defining and developing the results planned to be achieved,

➤ To mutually agree on the planned results for each program direction /patriotic student, healthy gifted student, hardworking student, role model student, etc.,

➤ The number or percentage of sub-programmes with well-defined results developed from the program's intended results,

➤ Outcome goals and objectives should include structured competencies and behaviors.

➤ The intended results of each sub-program should contribute to the achievement of the student's results in a well-planned and predetermined way.

➤ The goals and objectives of the program results are reflected in the results planned to be achieved by the program

➤ The sequence of the program ensures that the outcomes of the sub-program provide opportunities to acquire all the necessary skills and competencies.

2. To monitor the quality of the program: to know the actual results and to improve them.

➤ To compare the evaluation of the results planned to be achieved by the programs,

➤ Differences in assessment methods for each learning style and outcome,

➤ Similarities and differences between intended outcomes and evaluation techniques.

➤ The results planned to be achieved by the students of both the program and the course should be directly measurable.

➤ Openly present the results and conclusions of the inspection to interested stakeholders / in a timely manner that is understandable to them/,

➤ The number of teachers using assessment data to improve their teaching methods,

➤ The number of teachers using the information collected about the level of satisfaction and attitude of the students studying the subject

3. Educational Process: Developing Learning Activities

➤ Assess the quality of the educational process, with a focus on its connection to research, aiding students in achieving the specified outcomes of courses and programs.

➤ Examine the link between program design and the practical applicability of intended

outcomes, providing learners with opportunities to utilize their knowledge, skills, attitudes, and values to solve real-world situations and problems.

➤ Determine the percentage of classroom time students devote to traditional lectures.

➤ Calculate the percentage of active learning activities, such as internships, case studies, hands-on teaching methods, practical work, and research.

➤ Ensure that students comprehend the program's purpose, structure, organization, learning responsibilities, and how to assess their progress and development.

➤ Establish connections between the formal academic program and extracurricular activities, including guidance, academic development counseling, leadership programs, and other activities.

4. Gender Equality and Legal Compliance

➤ Evaluate the number of programs designed or revised to account for gender relations among learners.

➤ Track the inclusion of women members on program committees.

➤ Examine existing organizational policies related to gender equality and other relevant issues.

➤ Ensure the availability of training programs and materials that adhere to equality laws and regulations.

➤ Assess the percentage of programs, courses, and learning materials that are free from gender bias and inequality, including charts, career options, and more.

➤ Determine the number of courses and programs addressing gender-related topics.

➤ Calculate the percentage of programs and courses free from gender inequality within selected educational offerings.

5. Additional Considerations

- Monitor student progress and outcomes within the program, including access to both compulsory and elective courses.
- Develop strategies for ensuring the economic viability of the program.
- Measure the percentage of program graduates who are employed in their field of study.

These evaluation criteria are defined based on the services aimed at students and the requirements established by the central state administrative organization at the time.

Table 2. Evaluation Criteria for student development activities

No	Criteria	Unit
1	A structure is established to serve students by providing information on the labor market and mediating job opportunities	number
2	Vocational orientation	number
3	Graduate employment rate	percentage
4	Vaccination	number
5	Students covered by medical checkups	number
6	Students with disabilities	number
7	Students who will benefit from vehicle discounts	number
8	Students covered by health insurance	number
9	Students going to the local area for winter vacation	number
10	Activities of student societies and clubs	number
11	Students receiving scholarships	number
12	Feedback from students through the feedback box	number
13	"Let's Read a Book" campaign	number
14	Students participating in the student exchange program	number
15	Students doing research work	percentage
16	Student satisfaction	percentage

It is essential for the teachers within the school or department to share a common understanding of the core aspects of the "Student Development" program. When considering program monitoring, the following points should be taken into account:

1. Philosophy: Clarify the beliefs, principles, and values related to life skills and the concept of "learning to live" within the

"Student Development" program. This process can commence with a review of the program's vision, an examination of professional requisites, and solicitation of input from faculty members. It is crucial that the school or department maintains a collective grasp of the program's underlying philosophy.

2. Students: The "Student Development" program evaluates the attributes and circumstances of students engaged in lifelong learning, identifying the necessary characteristics for different types of lifelong learners. This assessment should consider students from diverse cultural backgrounds who may use English as a second language, as well as those with family responsibilities. Additionally, it should account for students' gender and other traits that may impact program implementation.

3. Learning outcomes: Compile a list of the learning outcomes of the Student Development program. This list should encompass the skills and competencies that students are expected to acquire by the time they graduate from the program or university. These competencies should enable students to embody respect for Mongolian values, become responsible citizens, patriots, and lifelong learners. For example:

- Students will critically assess research within their professional field.
- Students will develop and implement computer simulations, among other competencies.

4. Structure and Sequence: Each learning type within the Student Development Program should be evaluated to determine its contribution to each specific goal and objective. Develop a hierarchy diagram or graph that illustrates the relationship between different learning styles within the program and how these styles work towards the overarching goals. This approach helps identify illogical sequences, redundancies, and syllabus errors, such as when objectives are neglected during a lesson. It allows for necessary syllabus revisions to be targeted effectively.

5. Applicable Teaching Methods: Analyze these teaching methods based on learners' needs and their alignment with the program's goals and objectives. The primary focus in this section is to ensure that the learning methods and tools employed for life-long learning align with expected outcomes. If students are expected to demonstrate a specific skill, they must be given opportunities to develop that skill.

6. Assessment of the Life-Long Learning Process: Evaluate the methods and techniques used to assess students. Examples include 1) essays, 2) multiple-choice tests, 3) teamwork, 4) homework, and more. These methods and techniques should be analyzed to determine if they cater to all students' needs, are compatible with teaching methods and materials, and align with the broader goals of the program and the university. Assessment extends beyond course content and programs to encompass the expected learning environment and format.

7. Evaluation of the Life-Long Learning Process: How should the effectiveness of the course/program's learning be assessed? This is a pivotal component of the program, just as learning assessment is. Consider techniques such as 1) evaluating student learning, 2) evaluating student work, 3) providing feedback, letters, recordings, 4) professional reviews of course content, and more. It is imperative that the department or school regularly and systematically monitors all facets of the program to facilitate changes and improvements.

Furthermore, graduates possess the ability to communicate with individuals from diverse nationalities and are equipped to compete on an international level.

In the 2021 research report titled "Determining the Fundamental Categories of Mongolia's Integrated Education System and representing it with a System Model," the study focused on "Basic Human Skills" or 21 essential skills. These 21 skills were developed through a combination of external and internal sources and are categorized into three groups: cognitive, communication, and technical skills. These 21 skills, intended for acquisition by students at all levels of educational institutions, represent the advantages derived from educational activities. By honing these 21 skills, students in higher education can not only meet their own requirements but also contribute to fulfilling the basic needs of others and generating mutual value. Competencies that should be acquired by the learner are:

1. Ability to recognize the environment and express ideas
2. Analytical skills
3. Ability to diagnose and solve problems
4. Critical thinking
5. Creativeness
6. Ability to perform system analysis and evaluation
7. Making evidence-based decision
8. Ability to recognize and value customs and traditions
9. Digital data collection capabilities
10. Ability to select and use smart techniques
11. Ability to create and program technological solutions
12. Leadership and influencing skills
13. Active learning skills
14. Adaptability
15. Ability to protect mental health
16. Acceptance of difference
17. Ability to provide quality services

18. Communication skills
19. Collaboration skills
20. Ability to protect one's own health
21. Ability to approach problem solving ethically

In the new century, the quality of education extends beyond the quantitative measurement of students' grades. It is now evaluated based on life skills, competitiveness, and personal development. Concepts like global citizenship and global awareness have become paramount, as education is intricately entwined with values such as global citizenship, respect for human rights and freedoms, and understanding and acceptance of others.

A global citizen is an individual who identifies themselves as part of a larger global family and recognizes that their choices and actions have consequences not only for individuals but also for social groups, local communities, nations, and the world as a whole. Global citizenship education aims to cultivate students with a genuine commitment to contributing to a peaceful, equitable, safe, and stable world. It places particular emphasis on nurturing the following three skills:

1. Cognitive ability: The capacity to acquire knowledge and understanding of global issues in other nations and make informed judgments about them.
2. Social skills: The aptitude to integrate into a social group, share common values and responsibilities, exercise individual rights, empathize with others, and respect the shared interests and differences of others.
3. Problem-solving ability: The competency to assume responsibility for regional, national, and global issues.

In the process of acquiring these skills at all educational levels, it is essential to consider not only the role of schools and teachers but also the influence of parental attitudes and family upbringing.

To assess progress, it is crucial to develop indicators for measuring outcomes. These indicators are closely associated with various characteristics of outcomes. Each input, activity, output, effect, and impact has its own set of criteria.

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The article "Mongolian medical education: the past, present and future" offers a concise history covering over 400 years of the development of medical educational institutions in Mongolia and the achievements of medical education over the past 80 years. It is believed that Mongolia has developed and enriched medical education by selflessly learning from national traditions and wisdom, in addition to incorporating lessons from the works of global medical education scientists. With this quality, there is no doubt that it will serve as a story and valuable experience for medical education researchers in developing countries. First and foremost, I extend my heartfelt thanks to Ts.Lkhagvasuren, Kh.Altaisaikhan, T.Altantsetseg, O.Bolorsaikhan, B.Oyungoo, N.Sumberzul and N.Khurelbaatar, who collaborated in creating the article "Mongolian medical education: the past, present and future".

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