

Current challenges in professional music education: A case study of violin training in Mongolia

Enkh-Amgalan Enkhtsetseg^{1*} , Narantsetseg Munkhtsetseg² 

^{1,2} School of Educational Studies, Mongolian National University of Education, Mongolia

*Corresponding author: Enkh-Amgalan Enkhtsetseg, tseegiibk@gmail.com

CITATION

Enkh-Amgalan Enkhtsetseg, Narantsetseg Munkhtsetseg. Current challenges in professional music education: A case study of violin training in Mongolia. International Journal of Social Science and Humanities Research-MIYR 2025, 5(4), 1~14. <https://doi.org/10.53468/mifyr.2025.5.4.1>

ARTICLE INFO

Received: 21 June 2025

Revised: 1 July 2025

Accepted: 27 August 2025

Available online: 30 December 2025

COPYRIGHT



Copyright © 2025 by author(s). International Journal of Social Science and Humanities Research-MIYR is published by Misheel institute for young researcher's NGO. This work is licensed under the Creative Commons Attribution (CC BY 4.0) license. <https://creativecommons.org/licenses/by/4.0/>

Abstract— Professional music training in Mongolia requires early specialization, physical endurance, and strong psychological resilience. Despite this rigorous framework, dropout rates among violin students remain exceptionally high, suggesting deeper health-related and institutional issues. This study investigates the multifactorial reasons for student withdrawal from professional violin programs, focusing on musculoskeletal strain, communication dynamics, family environment, and institutional support structures. Using a mixed-methods design, the study collected quantitative and qualitative data from 35 participants, including 25 former violin students, five parents, and five teachers. Statistical analyses—correlation, t-tests, and regression—were complemented by thematic analysis of interviews and institutional records. Results identified musculoskeletal pain (particularly in the shoulder, neck, and wrist) as the strongest predictor of dropout. Physical discomfort significantly reduced practice consistency and performance confidence. Communication gaps among teachers, parents, and students further delayed recognition of problems, while unstable home environments and limited practice space contributed to declining motivation. Institutional constraints, including insufficient teacher training in injury prevention, lack of preventive health education, and inadequate documentation of withdrawal reasons, further compounded the problem. The study concludes that student dropout is not attributable to lack of talent or commitment but to the accumulation of untreated physical strain, communication breakdowns, and structural limitations. The paper recommends integrating an “Artistic Physical Education” curriculum, improving teacher training in musician health, establishing national standards for musician well-being, enhancing parent engagement, and strengthening institutional documentation systems. These reforms are essential for sustaining Mongolia’s classical music tradition while ensuring the long-term well-being of young violinists.

Keywords— Violin education. Musculoskeletal Pain. Student dropout. Preventive training. Performing arts Medicine. Communication dynamics. Educational reform

1. INTRODUCTION

Professional music education plays an essential role in sustaining a nation’s cultural identity, artistic heritage, and creative continuity. In Mongolia, classical music—particularly violin performance—has long held a distinctive cultural significance within national arts education [1]. Institutions such as the Mongolian State Conservatory and its affiliated music schools serve not only as centers for technical instruction but also as cultural custodians that transmit artistic knowledge across generations. Their mission extends beyond skill acquisition, encompassing the preservation of interpretive traditions and performance practices that connect Mongolia’s cultural identity with global classical music movements [2].

International scholarship widely recognizes the developmental advantages associated with early instrumental training. Numerous studies indicate that structured practice in string instruments enhances cognitive flexibility, auditory discrimination, emotional development, and fine-motor coordination [3], [4]. Yet this same body of research emphasizes that long-term instrumental study places considerable physical and psychological demands on children whose musculoskeletal systems are still developing.

Research on young violinists shows that early beginners—typically between ages five and eight—are physiologically more susceptible to strain due to softer bones, ligamentous laxity, and immature postural stability [5]. The violin's asymmetrical playing position, the elevation of the left shoulder, and the continuous bowing mechanics require sustained muscular engagement, making young students particularly vulnerable to overuse injuries (e.g., tendinitis, nerve compression, and muscle imbalance) if technical guidance or preventive measures are insufficient [6], [7].

In Mongolia, these risks are intensified by contextual challenges specific to the educational environment. Music schools often operate with limited institutional resources, and only a small proportion of instructors have received formal training in ergonomics or performing-arts health [8]. Cultural expectations further shape student experiences; many children refrain from reporting discomfort out of respect for teachers or fear of being labeled weak or uncommitted. Cross-cultural studies indicate that in hierarchical teacher–student environments—common in East Asian and Central Asian educational contexts—students tend to conceal physical pain to maintain social harmony and avoid disappointing authority figures [9]. For families, music education represents a major emotional and financial investment, which can pressure children to practice through discomfort rather than seek help. These sociocultural factors collectively shape not only the learning environment but also long-term persistence in professional musical training.

Despite Mongolia's strong tradition of classical music instruction, dropout rates among young violinists remain a serious concern. According to institutional records, 464 students entered the string department between 2003 and 2024, but only 171 (36.8%) completed the program, with nearly two-thirds departing prematurely [10]. More recent observations between 2019 and 2022 documented 27 student withdrawals, of whom 25 participated in the present study. Their narratives highlight concerns regarding technical instruction, physical safety, psychological stress, and communication within the educational ecosystem. High attrition rates threaten Mongolia's cultural sustainability by reducing the pool of trained performers, diminishing the future workforce of orchestras and music teachers, and weakening the professional arts infrastructure [11].

Although performance-related musculoskeletal disorders (PRMDs) have been extensively documented in international research, relatively little scholarship addresses how these factors interact with Mongolia's cultural, institutional, and pedagogical conditions. Studies from Europe, North America, and East Asia consistently show high injury rates among young musicians [12], yet Mongolia differs through limited access to specialized performing-arts medical care, traditional teacher-centered pedagogies, and low parental awareness of technical demands. Moreover, preventive health education is seldom integrated into music curricula, creating a gap between what international research recommends and what Mongolian institutions currently practice [13]. These contextual differences demonstrate why global frameworks cannot be adopted uncritically, highlighting the need for localized research.

To address these gaps, the present study examines the lived experiences of violin students who discontinued their training. Its objectives are threefold: (1) to identify the main factors influencing dropout among young violinists; (2) to analyze how musculoskeletal challenges shape academic performance and persistence; and (3) to develop context-specific recommendations that align with Mongolia's cultural norms and institutional realities. These aims are pursued through a mixed-methods approach that brings together quantitative data, student and teacher narratives, and comparative educational analysis.

The study is guided by the following research questions:

- 1) What underlying factors contribute to dropout in professional violin programs in Mongolia?
- 2) How do musculoskeletal conditions affect adolescent violinists during key stages of physical development?
- 3) What preventive strategies and pedagogical reforms could realistically reduce dropout rates within Mongolia's music education system?

The study focuses on violin students aged 6–18 in Ulaanbaatar's specialized music schools. While other string instruments share similar physical demands, the violin's posture, bowing mechanics, and left-arm elevation make it uniquely relevant for examining injury-related attrition [14]. Nevertheless, the insights gained may have broader implications for other instrumental groups. The significance of this study spans multiple domains. Educationally, it provides evidence-based guidance for curriculum design, teacher training, and institutional reform. From a health perspective, it underscores the importance of integrating musculoskeletal awareness, preventive instruction, and wellness programs into music training. Culturally, the study contributes to Mongolia's efforts to sustain its classical music traditions by reducing preventable dropout and ensuring a stable pipeline of skilled musicians [15].

The findings hold implications not only for students and teachers but also for policymakers and cultural leaders concerned with the long-term vitality of performing arts education. This paper is organized into five chapters. The Introduction presents the research context and conceptual foundations. The Literature Review examines international and Mongolian scholarship on musician health and pedagogy. The Methodology chapter outlines the study design, participants, and analytical procedures. The Results chapter reports the findings, followed by the Discussion and Conclusion, which interpret the results, offer recommendations, and identify areas for future research.

2. LITERATURE REVIEW

The study of musicians' physical and psychological well-being has gradually evolved into a distinct academic discipline over more than a century. Early biomechanical analyses laid the foundation for performing arts medicine. One of the earliest systematic examinations was conducted by Louis Marcienne in 1884, whose treatise *Leçons de Mécanisme du Mouvement* described the mechanical demands of violin performance with remarkable precision for its time [16]. His insights into repetitive strain, asymmetrical posture, and localized muscular overload anticipated what would later be described clinically as overuse syndromes, tendinopathies, nerve compressions, and chronic muscular imbalance [6].

Throughout the mid-twentieth century, pain and physical discomfort were widely perceived as unavoidable by-products of professional musicianship. It was not until the 1960s–1970s that medical researchers began documenting the prevalence and etiology of playing-related injuries. Large-scale studies across European orchestras revealed notably high injury rates among string players, particularly violinists and violists [17]. Their findings showed that static elevation of the left shoulder, repetitive rotation and abduction of the upper arm, and complex bowing mechanics all contribute to disproportionate strain on the cervical spine, shoulder complex, and upper extremities [7]. These studies paved the way for performing arts medicine to emerge as an interdisciplinary field integrating anatomy, kinesiology, neurology, psychology, and pedagogy [18].

Across global contexts, musculoskeletal disorders (MSDs) remain the most commonly documented health problems among musicians. Epidemiological research consistently shows that between 60–90% of musicians experience musculoskeletal pain or functional limitation during their training or professional careers [19]. A landmark survey of 133 German orchestras reported that 76% of musicians suffered health issues affecting their performance, with 84% of string players reporting at least one MSD [20]. Violinists, in particular, exhibit higher injury prevalence due to biomechanical asymmetry: while the left arm maintains the violin in a fixed elevated position, the right arm executes complex sequences of bowing movements involving the deltoid, rotator cuff, triceps, forearm flexors, and wrist articulators [21]. This asymmetry produces uneven load distributions, which increase susceptibility to chronic strain.

Young musicians represent an especially vulnerable group. Their bones, joints, and connective tissues are still developing, with incomplete ossification and greater ligamentous laxity [22]. Early instrumental specialization—often beginning before the age of eight—places significant physical demands on undeveloped structures. Research shows that practice durations exceeding two hours per day significantly elevate the likelihood of repetitive strain injuries (RSIs) in young violinists. When such routines are combined with insufficient warm-up, unmonitored practice, or teacher-centered methods emphasizing technical output rather than ergonomic efficiency, injury risk increases substantially [23]. The cumulative nature of strain, as shown in longitudinal studies, also reveals that mild discomfort left untreated can progress into severe pain requiring medical intervention or withdrawal from training [24].

Psychological and cognitive pressures further compound the physical risks. Music students often work in environments shaped by perfectionism, high expectations, performance anxiety, and competitive culture [25]. Research in performance psychology demonstrates that such pressures reduce emotional resilience, heighten stress responses, and negatively affect motor learning [26]. Cognitive load theory similarly emphasizes that mastering complex motor skills while maintaining interpretive accuracy creates significant mental burden; unmanaged cognitive load intensifies muscle tension and contributes to maladaptive practice habits, ultimately increasing the likelihood of burnout [27].

The student–teacher relationship is another critical factor shaping persistence in music training. Supportive and communicative teaching environments are strongly associated with better emotional outcomes and reduced risk of injury [28]. In contrast, authoritarian or unsympathetic pedagogical styles—still prevalent in some traditional conservatory settings—may cause students to internalize stress, hide physical pain, or associate discomfort with personal inadequacy. This is particularly relevant in collectivist cultural contexts, including Mongolia, where hierarchical respect toward instructors can discourage open communication about pain or difficulty [29].

In response to these multifaceted challenges, institutions worldwide have developed evidence-based preventive health programs. The Alexander Technique and Feldenkrais Method are among the most widely studied approaches, each shown to improve body awareness, reduce unnecessary tension, and support efficient movement patterns for musicians [30]. Complementary practices such as Pilates, yoga, and Qigong have also been integrated into conservatory curricula for their benefits in postural stability, breath regulation, flexibility, and stress reduction [31]. Furthermore, music-specific physical therapy—tailored to the biomechanics of each instrument—has become a standard component of health services in premier music institutions. Evidence from the Royal College of Music (UK) demonstrates that structured wellness programs significantly reduce injury rates and promote more sustainable practice behaviors [32].

In Mongolia, however, music education operates within a distinct cultural and institutional context. While the country maintains a strong tradition of classical training, several challenges impede effective injury prevention. Awareness of musician health remains limited among teachers and parents, resulting in early symptoms of strain being disregarded or misinterpreted. Cultural norms emphasize respect for authority, which may inhibit students from disclosing discomfort or seeking help [33]. Access to performing-arts medical specialists is minimal, and most curricula do not incorporate ergonomics, wellness training, or physical conditioning tailored to young musicians. Teacher-centered pedagogies, though effective for transmitting repertoire and stylistic knowledge, may unintentionally reinforce the belief that endurance and silence in the face of pain are signs of discipline [34].

Comparative analyses reveal significant disparities between international best practices and Mongolian conservatory systems. Institutions in Europe and North America typically provide integrated health education, routine screenings, counseling services, and biomechanics-informed teacher training [35]. By contrast, Mongolian institutions generally lack preventive structures, resulting in students navigating the physical and psychological demands of violin training without systematic support. These gaps underscore the need for culturally and institutionally adapted models rather than direct transplantation of foreign systems.

The present study draws upon a range of theoretical frameworks to contextualize attrition in Mongolian violin education. Biomechanical theory explains the physical loading patterns that lead to injury; educational psychology examines how motivation, stress, and self-efficacy influence persistence; sociocultural theory highlights how hierarchical relationships shape communication and behavior; and public health models emphasize prevention, early intervention, and accessible care as key components of sustainable training environments [7]. In accordance with local publication requirements, this review integrates relevant insights from recent Mongolian scholarship in education. Suvd et al. (2024) emphasize that culturally responsive school environments must address learners' cognitive, emotional, and physical needs in an integrated manner, underscoring the importance of holistic support systems within Mongolian educational institutions [36]. These principles offer a valuable lens for understanding the conditions surrounding professional music training, where young violinists navigate demanding physical routines, heightened emotional expectations, and culturally shaped pedagogical relationships.

Taken together, the literature indicates that the challenges faced by young Mongolian violinists arise from the interaction of musculoskeletal strain, instructional practices, sociocultural expectations, and institutional constraints. While global performing-arts medicine provides essential frameworks for injury prevention, Mongolia's distinctive educational context necessitates culturally responsive and developmentally appropriate strategies. Without such adaptations, the early artistic potential of young musicians risks being limited not by their ability or motivation, but by preventable discomfort, miscommunication, and insufficient structural support.

3. METHODOLOGY

This study employed a mixed-methods research design to investigate the complex factors contributing to dropout among young violin students in Mongolia. Because student withdrawal emerges from the combined influence of physical strain, psychological pressures, pedagogical structures, and sociocultural norms, a single-method approach would have been insufficient. The integration of quantitative and qualitative strands enabled the research to capture statistical tendencies while also interpreting the personal experiences that give meaning to those patterns.

3.1 RESEARCH DESIGN AND RATIONALE

The quantitative component examined relationships among several variables previously identified in performing-arts medicine literature—practice duration, musculoskeletal pain, communication quality, and academic performance. These indicators were selected to understand how physical and educational pressures interact to influence dropout. Conversely, the qualitative component explored students' and teachers' lived experiences, allowing the study to interpret numerical findings in light of real learning conditions. Interviews and open-ended survey responses illuminated emotional burdens, interpersonal difficulties, and institutional constraints that statistical data alone could not fully explain.

Bringing the two strands together strengthened the validity of the study through triangulation, reducing the bias that often accompanies single-method designs and ensuring that conclusions were grounded in multiple forms of evidence.

3.2 PARTICIPANTS

A total of 35 participants took part in the study:

25 former violin students who had completed at least three years of formal instruction before discontinuing their studies;

5 parents or guardians, and

5 professional violin instructors working in Ulaanbaatar's specialized music schools.

Purposive sampling ensured that each participant had direct and relevant experience. Recently withdrawn students were included to improve recall accuracy, while teacher participants—all with over ten years of experience—provided professional insight into patterns of student difficulty, pain-related behavior, and communication challenges. Parents contributed crucial information about home environments, practice expectations, and decision-making processes regarding withdrawal.

3.3 DATA COLLECTION PROCEDURES

Four complementary tools were used to obtain a comprehensive dataset: questionnaires, interviews, retrospective pain assessment, and document review.

The structured questionnaire administered to students and parents covered demographic background, training routines, health experiences, and environmental factors. Likert-scale items and open-ended questions allowed for both numerical comparison and contextual interpretation. Semi-structured interviews with violin instructors were used to gather professional observations about student posture, performance decline, practice consistency, communication with families, and perceived institutional limitations. The flexible interview format ensured depth while maintaining consistency across sessions.

To assess physical discomfort, a Visual Analog Scale (VAS) was used, enabling students to retrospectively report pain levels experienced prior to dropout. Although retrospective, this measure was necessary given the absence of medical records within most music schools.

Finally, documentary analysis of institutional withdrawal records and academic reports allowed for comparison between official explanations and the reasons provided by students and parents, revealing inconsistencies that pointed to deeper systemic issues.

3.4 DATA ANALYSIS

Quantitative data were analyzed using SPSS 28, with descriptive statistics used to map general trends. Correlation analysis examined associations between musculoskeletal pain, practice patterns, communication quality, and academic performance. Independent samples t-tests compared teacher and parent perceptions, while regression models were used to identify the strongest predictors of dropout. Statistical significance was set at $p < 0.05$.

Qualitative data were analyzed through inductive thematic analysis. Responses were coded and grouped into major thematic categories, including physical strain, communication breakdowns, motivational decline, emotional fatigue, academic pressure, and institutional barriers. Contradictions between student narratives and institutional documentation were examined carefully, as these often uncovered overlooked structural problems. Synthesizing the qualitative and quantitative strands strengthened the interpretive power of the findings and allowed for a more holistic understanding of dropout.

3.5 RELIABILITY, VALIDITY, AND ETHICAL ASSURANCE

To ensure methodological rigor, several validity strategies were incorporated. Cronbach's alpha for key questionnaire scales was 0.84, indicating strong internal consistency. Triangulation across data types enhanced reliability, while member checking allowed teachers to confirm the accuracy of their interview summaries. An external expert review of the methodological design was conducted by two senior pedagogues. All adult participants provided informed consent, while minors participated only with parental consent and personal assent. Anonymity was protected through the use of coded identifiers and the removal of all personal data from transcripts and reports.

3.6 LIMITATIONS

While the approach provided a rich and multidimensional understanding of the phenomenon, several limitations remain. The modest sample size restricts generalizability, and retrospective reporting may introduce recall bias, particularly in the assessment of pain. Additionally, as the study was confined to schools in Ulaanbaatar, findings may not represent experiences in rural regions, where resources and teaching conditions differ. Nonetheless, the combination

of methodological strands produced a coherent and credible portrait of the structural, pedagogical, and physiological challenges contributing to early withdrawal from violin study in Mongolia.

4. RESULTS

This section presents the empirical findings derived from the mixed-methods analysis. Quantitative results from the questionnaire and statistical tests are integrated with qualitative insights from interviews and open-ended responses. To ensure clarity and adherence to MIYR formatting guidelines, all figures and tables are placed immediately after the paragraph in which they are first referenced.

4.1 PATTERNS OF DISCONTINUATION AND PRACTICE BEHAVIOR

Analysis of the student withdrawal records revealed distinct patterns regarding the grade levels at which young musicians discontinued their studies. The majority of withdrawals occurred between Grades VI–IX, corresponding to early adolescence—a period marked by rapid physical growth and heightened vulnerability to musculoskeletal strain. This tendency reflects a developmental window in which physical discomfort, academic pressure, and psychological stress converge.

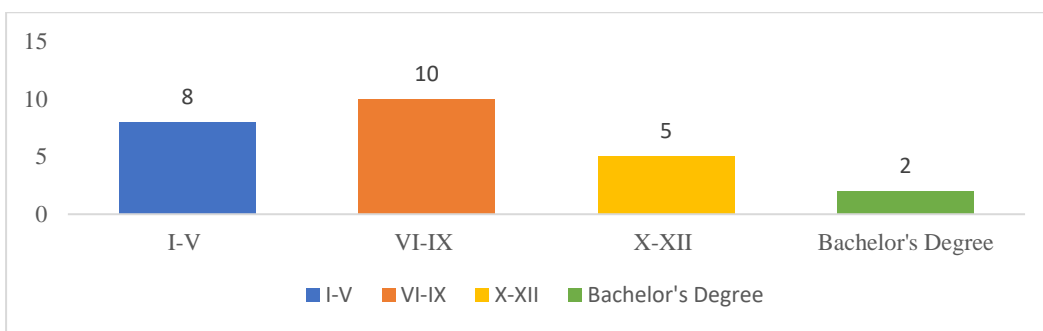


Fig. 1 Grade levels at which students discontinued training

Practice habits displayed a significant influence on students’ long-term persistence. Quantitative results show that 60% of former violin students practiced less than one hour per day, significantly below the instructional expectation communicated by teachers. Correlation analysis revealed a strong association between daily practice duration and professional-subject achievement ($r = 0.67, p < 0.01$), indicating that inconsistent practice contributed directly to declining performance. In open-ended responses, students attributed reduced practice not to lack of interest, but to physical discomfort and inadequate practice environments at home. Many described experiencing fatigue or pain that prevented extended sessions, while others noted that noise, limited space, or household responsibilities disrupted practice routines. To illustrate these questionnaire-based findings, (Table 1) summarizes the key quantitative results for family support, communication, practice time, and contributing factors to reduced practice.

Table 1. Summary of Questionnaire Results (Students, Parents, Teachers)

Variable	Main Findings	Statistical Indicator	Interpretation
Family Support	72% students, 80% parents: “sufficient”; 80% teachers: “insufficient”	$r = 0.42, p = 0.03$	Significant perception gap between teachers and families
Communication Quality	Students positive (60%); parents (65%) & teachers (80%) rate insufficient	$t(8)=3.12, p = 0.004$	Communication breakdown across groups
Practice Time	60% practiced <1 hour/day	$r = 0.67, p = 0.001$	Insufficient practice strongly tied to poor performance
Causes of Low Practice	36% physical pain; 28% poor home environment	$R^2 = 0.61, p = 0.007$	Physical/environmental barriers limit practice

(Source: Field survey, N = 35)

4.2 PHYSICAL STRAIN AND MUSCULOSKELETAL LIMITATIONS

Musculoskeletal discomfort emerged as one of the most influential predictors of student withdrawal. Seventy-six percent of former students reported recurrent or chronic pain during their years of study, particularly in the left shoulder, neck, upper back, and bowing wrist. Visual Analog Scale (VAS) ratings indicated that a substantial portion experienced moderate to severe pain.

Regression analysis confirmed musculoskeletal pain as a statistically significant predictor of withdrawal ($\beta = 0.58$, $p < 0.01$). Students who reported high pain levels were considerably more likely to discontinue than those reporting mild discomfort. Interviews revealed that many students concealed their pain due to fear of being judged as weak, undisciplined, or insufficiently talented. This underreporting was especially pronounced in adolescents aged 11–15.

Teachers acknowledged observing signs of tension—raised shoulders, collapsed posture, gripping in the bow hand—but noted that limited lesson time and lack of institutional training in musician health often prevented early intervention.

4.3 COMMUNICATION DYNAMICS AND THEIR IMPACT ON PERSISTENCE

A consistent finding across data sources was the existence of communication gaps among students, parents, and teachers. While instructors generally believed that they communicated adequately with families, parents expressed feeling underinformed about their child’s struggles or progress. Students, in turn, described feeling intimidated about raising concerns during lessons. A t-test comparing teacher and parent responses revealed a statistically significant difference in perceived communication quality ($t = 3.12$, $p = 0.004$). These misalignments contributed to delays in addressing pain, technical difficulties, or emotional fatigue.

To demonstrate how communication, physical strain, and academic decline collectively contribute to withdrawal, (Table 2) presents the ten most frequently reported reasons for discontinuation.

Table 2. Actual Reasons for Student Withdrawal

No	Actual Reasons	Percentage
1	Decrease in grades in professional subjects	33%
2	Issues in communication between teachers, students, and parents	16%
3	Injuries and illnesses	12%
4	Overload from training sessions	11%
5	High pressure and workload at home	10%
6	Parental divorce or becoming an orphan	5%
7	Injuries	4%
8	Others	4%
9	Settling abroad	3%
10	Classmate relationships	2%

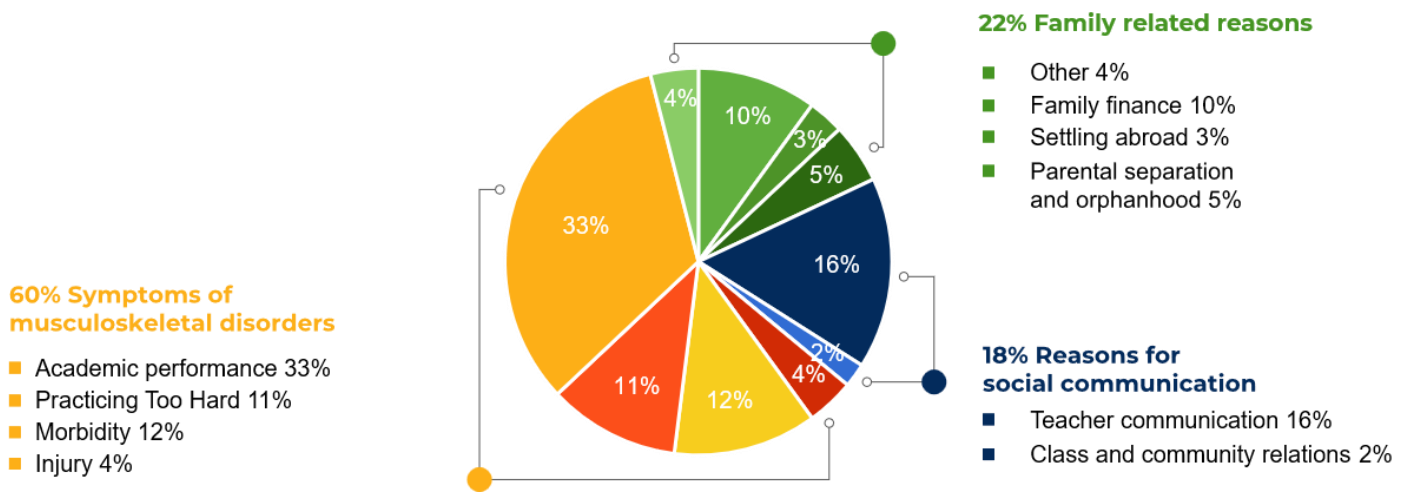
(Source: Open-ended student responses, N = 25)

4.4 INTEGRATION OF WITHDRAWAL CAUSES

The coherent analysis of open-ended responses revealed that the dropout decision cannot be attributed to a single cause. Instead, three dominant clusters of reasons emerged:

1. Musculoskeletal and Physical Strain
2. Family-related and Environmental Factors
3. Social and Pedagogical Dynamics

To illustrate the distribution of these causes, (Figure 2) visualizes the percentage breakdown of all reported withdrawal factors across the sample, highlighting academic decline (33%), communication problems (16%), and health-related issues (12%) as the most prevalent.



(Generated graph, Source: Student responses)
 Fig. 2. Primary reasons for students discontinuing violin studies

4.5 SYNTHESIS OF KEY FINDINGS

The overall results portray dropout as a multifactorial process shaped by the interplay of physiological, psychological, familial, and institutional conditions. Physical pain reduces practice consistency; diminished practice undermines performance; performance decline increases anxiety; and communication gaps prevent timely support. Environmental limitations further weaken motivation, while rigid instructional structures reduce the flexibility needed to address emerging challenges.

These interconnected dynamics form a cumulative burden that, for many students, eventually outweighs their desire or ability to continue long-term violin study.

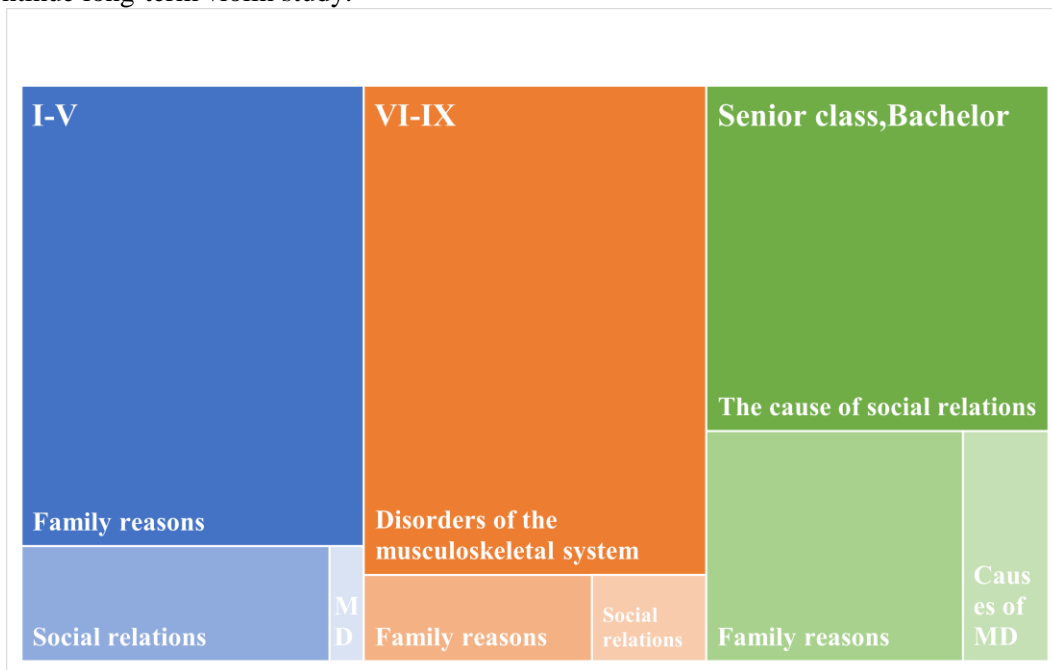


Fig 3. Scope of risk correlation

For students in grades I-V, family-related risks account for 22%.

For students in grades VI-IX, risks related to physical development changes or musculoskeletal disorders account for 60%.

For students in grades X-XII, social interaction risks account for 18%.

When looking at the reasons why children drop out of school, academic performance accounts for a high percentage. The underlying reason for this is often due to physical development, changes, and injuries, which are not well recognized by teachers, parents, and students themselves, leading to subsequent risks. The risk associated with the musculoskeletal system is particularly evident among adolescents aged 11-15, which is related to the period of intense bodily changes.

5. CONCLUSION

5.1 DISCUSSION

The findings of this study reveal that the decision of young violin students in Mongolia to discontinue their professional training results from an intricate interplay of physical, psychological, pedagogical, and sociocultural forces rather than a single determining factor. A central element in this process is the prevalence of musculoskeletal discomfort, which students frequently reported as moderate to severe, consistent with international research indicating that between 60%–90% of musicians experience similar strain during their training [6], [14], [19]. In the Mongolian context, however, discomfort often remained unreported due to students' fear of disappointing teachers or appearing insufficiently dedicated—a pattern that resonates with studies in collectivist cultures where hierarchical relationships can limit open communication [29]. This silence around pain, coupled with instructors' limited training in biomechanics or injury prevention [7], contributed to the gradual accumulation of physical tension until continuation of study became untenable.

The reduction in practice time observed among a majority of the students must be understood in light of this discomfort. While daily practice is widely recognized as essential for developing technical proficiency in string performance [3], [4], [23] pain fundamentally compromised students' capacity to sustain regular routines.

The correlation between practice duration and academic outcomes found in this study aligns with broader psychological research showing that reduced practice can trigger frustration, decreased self-efficacy, and diminished motivation ([25]- [27]).

Once performance quality begins to decline, students often perceive the gap between their effort and expected standards as insurmountable, creating a feedback loop in which physical strain, reduced practice, and emotional fatigue reinforce one another. Interviews revealed that many students interpreted their declining performance not as a health-related issue but as a personal inadequacy, intensifying their reluctance to seek help.

Communication gaps further exacerbated this progression. Although teachers perceived their communication with families as adequate, parents consistently reported feeling uninformed or excluded from pedagogical decisions. This discrepancy between instructor and parent perspectives is not unusual; it mirrors findings in arts education research showing that unclear communication structures can prevent early identification of learning difficulties or health concerns [28].

Students likewise expressed hesitation to raise concerns during lessons due to the authoritative pedagogical culture embedded in Mongolia's conservatory system. In several cases, even when teachers noticed signs of physical strain, institutional pressures—such as high teaching loads, performance expectations, and limited lesson duration—restricted their ability to intervene effectively. These structural barriers underscore that dropout is not solely a student-level choice but also reflects institutional limitations.

Family context emerged as another influential factor. Although most parents believed they were supportive, the study revealed that inconsistent home environments, limited practice space, and broader social pressures diminished students' ability to sustain long-term engagement with the violin. These findings align with Suvd et al. (2024), who argue that educational success in Mongolia—particularly within specialized learning contexts—requires holistic support systems that address learners' emotional, physical, and cognitive needs rather than relying solely on formal instruction. Students navigating family conflict, economic hardship, or caretaking responsibilities found it especially difficult to maintain disciplined practice routines, illustrating how external responsibilities can easily override artistic aspirations [36].

Institutional documents often framed withdrawal in general terms such as “personal issues” or “lack of progress,” yet student accounts revealed that these official explanations masked deeper structural and pedagogical issues. Without systematic health education, preventive screenings, or interdisciplinary support involving physiotherapists and counselors—as commonly practiced in leading international conservatories [13], [34], [30], [31]—students and teachers

were left without the resources needed to address emerging problems. The constraints identified in this study echo broader concerns raised in the global literature regarding the consequences of neglecting performer well-being within traditional music education systems [7], [18].

Taken together, the study's results suggest that the dropout phenomenon in Mongolian violin education should be understood through a multilayered perspective. Musculoskeletal pain is the immediate catalyst for many withdrawals, but its impact is magnified by communication breakdowns, motivational decline, family pressures, and institutional limitations. These factors form an interconnected system in which physical strain diminishes practice, reduced practice weakens performance confidence, inadequate communication delays intervention, and environmental challenges further erode persistence. When sustained over time, these pressures accumulate into a critical threshold beyond which continuing professional study becomes unfeasible. Ultimately, the findings emphasize that student withdrawal is not a reflection of a lack of talent or commitment but a predictable outcome of a system that demands high physical and emotional resilience while offering limited structural support.

Addressing this issue requires a comprehensive shift toward evidence-based, health-informed pedagogy; improved communication frameworks; strengthened family engagement; and institutional reforms that prioritize the long-term well-being of young musicians. Such changes would align Mongolia's music education practices with international standards while remaining sensitive to local cultural dynamics.

5.2 IMPLICATIONS

This study set out to investigate the factors contributing to student dropout in Mongolia's professional violin training programs by integrating quantitative data with the lived experiences of students, teachers, and families. The findings demonstrate that discontinuation is the outcome of a multifaceted interaction among musculoskeletal strain, communication gaps, diminishing motivation, family pressures, and institutional limitations. Although each category has its own distinct influence, it is their combined weight—accumulated over time—that ultimately leads young musicians to abandon their long-term artistic trajectory.

One of the most prominent determinants of withdrawal was musculoskeletal discomfort. The high prevalence of neck, shoulder, back, and wrist pain among former students underscores the physical vulnerability of young violinists and reveals an urgent need for preventive health education. Pain not only interfered with practice routines but also weakened confidence and heightened emotional stress, confirming its central role in the dropout process. Yet discomfort rarely emerged in official institutional records, indicating a persistent disconnect between students' experiences and the educational structures meant to support them.

Communication breakdowns between teachers, students, and parents further intensified these difficulties. Many students did not disclose their pain, fearing judgment or misunderstanding, while parents often remained unaware of their child's struggles due to limited feedback from teachers. This misalignment hindered timely intervention, allowed injuries and frustrations to escalate, and contributed significantly to the erosion of motivation. Effective communication, therefore, must be understood not as an auxiliary feature of instruction but as a critical component of student retention.

Family environment also played a meaningful role. Students from supportive and stable households were better able to maintain consistent practice routines and manage stress, whereas those experiencing conflict, economic hardship, or limited space faced barriers beyond their personal control. These findings demonstrate that musical achievement is deeply embedded in broader social and emotional contexts and cannot be separated from the lived realities of students' home lives.

Institutional constraints—including high teaching loads, limited lesson durations, insufficient training in musician health, and lack of interdisciplinary support—further compounded the challenges faced by students and teachers alike. The discrepancy between official withdrawal categories and reported causes highlights the need for more comprehensive internal monitoring and documentation systems.

Without addressing these structural limitations, teachers and students remain unequipped to confront the rising pressures inherent in professional music training.

Taken together, the study's findings point to the necessity of a more holistic and sustainable approach to professional violin education in Mongolia. Strengthening early health education, promoting open communication practices, engaging families more meaningfully, and providing teachers with specialized training in ergonomics and student well-being are essential steps toward reducing preventable dropout. Institutional reforms—such as incorporating interdisciplinary support systems, reducing teacher burden, and improving documentation practices—would further align Mongolian music education with international standards while respecting local cultural contexts.

Ultimately, this research underscores that young musicians rarely withdraw due to a lack of talent or passion. Rather, they are navigating a demanding system that offers insufficient mechanisms for safeguarding physical and emotional

health. By adopting evidence-based, student-centered, and health-informed practices, Mongolia's music schools have the opportunity to nurture not only artistic excellence but also the long-term well-being and resilience of the next generation of performers.

5.3 RECOMMENDATIONS

The findings of this study highlight the multidimensional nature of student dropout in Mongolian violin education. Addressing these challenges requires coordinated action across pedagogical practice, institutional governance, and community engagement. The following recommendations are grounded in the empirical results of this research and aligned with international best practices in performing-arts education.

Strengthening Educational Practice

A central conclusion of the study is that musculoskeletal discomfort and improper physical technique are primary contributors to withdrawal. Therefore, violin pedagogy must adopt a more health-informed and preventive orientation. First, music schools should integrate an "Artistic Physical Education" component into the core curriculum. This program should combine basic biomechanics, posture correction, and warm-up routines tailored to the developmental stages of young musicians. Internationally validated approaches such as the Alexander Technique, Feldenkrais Method, and Pilates-based conditioning should be adapted to the Mongolian context to promote efficient movement patterns and reduce injury risk.

Second, teacher capacity-building is essential. Instructors require regular professional development in musician health, adolescent physical development, and injury-prevention pedagogy. Such training would enable teachers to recognize early signs of strain and adjust technical instruction accordingly.

Third, age-sensitive educational strategies should be established. Elementary students benefit most from structured family guidance and foundational motor-skill development, whereas middle-school students require targeted support addressing their higher vulnerability to growth-related strain. Senior students, on the other hand, need career guidance and psychosocial support as they transition to advanced study.

Finally, routine musculoskeletal screenings—at least once per semester—should be implemented to monitor students' physical condition and identify problems before they become chronic.

Enhancing Institutional and Policy Frameworks: The research identified systemic gaps in institutional structures, including inconsistent documentation, limited access to health professionals, and lack of national guidelines. To address these issues, policy-level reform is required. First, Mongolia should establish national standards for musicians' health and safety, outlining age-appropriate practice durations, rest intervals, ergonomic requirements, and expected teacher competencies in health-informed pedagogy. Second, a formal referral system between music schools and healthcare providers—particularly physiotherapists, sports medicine specialists, and performing-arts clinicians—should be created to ensure timely assessment and treatment of emerging injuries. Third, institutions should adopt standardized documentation protocols that record accurate reasons for student withdrawal. This will allow schools and policymakers to track patterns over time and design evidence-based interventions. Finally, institutional reforms should prioritize reducing excessive teacher load, expanding interdisciplinary collaboration, and allocating time within weekly schedules for health and wellness instruction.

Strengthening Family and Community Engagement: Given the strong influence of home environments on student persistence, families must be engaged as active partners in the educational process. Parent-focused learning modules should be developed to improve understanding of practice supervision, ergonomic home setup, and emotional support strategies for young musicians. Such modules would empower parents to recognize early signs of physical discomfort and support their children more effectively. Additionally, schools should introduce predictable communication platforms, including scheduled parent-teacher conferences and digital progress monitoring tools, to align expectations and facilitate early intervention. Beyond individual families, broader community awareness campaigns should promote understanding of the physical and psychological challenges faced by young musicians. Such campaigns can help reduce stigma, encourage help-seeking behavior, and foster a culture that prioritizes musician well-being.

Directions for Future Research: Future investigations should build upon the current study by conducting longitudinal research that follows students over time to examine the long-term effects of preventive programs and structural reforms. Broadening the sample to include other musical disciplines—such as piano, wind instruments, and traditional Mongolian instruments—would enrich understanding of instrument-specific risks. Given Mongolia's rich heritage of traditional movement practices (e.g., breathing techniques, posture-based folk exercises), research should also explore how these can be integrated with established injury-prevention methods to develop culturally grounded interventions. Finally, the

creation of locally validated assessment tools for monitoring musician health would further strengthen the evidence base for policy and practice in Mongolian music education.


REFERENCES

[1]	Mongolian State Conservatory.(2020). About the school. www.conservatory.edu.mn/about-us/about-school
[2]	Schellenberg, E. G. (2004). Music lessons enhance IQ. <i>Psychological Science</i> , 15 (8), 511–514. doi.org/10.1111/j.0956-7976.2004.00711.x
[3]	Hyde, K. L., Lerch, J., Norton, A., Forgeard, M., Winner, E., Evans, A. C., & Schlaug, G. (2009). Musical training shapes structural brain development. <i>Journal of Neuroscience</i> , 29 (10), 3019–3025. doi.org/10.1523/JNEUROSCI.5118-08.2009
[4]	Ranelli, S., Straker, L., & Smith, A. (2011). Playing-related musculoskeletal problems in children learning instrumental music. <i>Medical Problems of Performing Artists</i> , 26 (3), 123–139. doi.org/10.21091/mppa.2011.3022
[5]	Zaza, C. (1998). Playing-related musculoskeletal disorders in musicians: A systematic review. <i>CMAJ</i> , 158 (8), 1019–1025. doi.org/10.1503/cmaj.158.8.1019
[6]	Ackermann, B. J., Driscoll, T., & Kenny, D. T. (2012). Sound practice for professional musicians. <i>Safe Work Australia</i> .
[7]	Mongolian National University of Education. (2022). Music teacher training report: Status of ergonomics education in Mongolian music schools. MNUE Press. www.msue.edu.mn/research/music-education-2022
[8]	Wu, S. J. (2002). The effect of culture on the learning styles of Asian international music students. <i>International Education</i> , 32 (1), 42–53. doi.org/10.1080/15507020209500271
[9]	Mongolian State Conservatory. (2024). Student enrollment and completion statistics: String department. Internal institutional report. www.conservatory.edu.mn/statistics
[10]	String Department. (2022). Student enrollment and completion statistics. Mongolian State Conservatory.
[11]	Rickert, D. L., Barrett, M. S., & Ackermann, B. J. (2015). Injury and the orchestral environment: Part I. <i>Medical Problems of Performing Artists</i> , 30 (1), 1–8. doi.org/10.21091/mppa.2015.1001
[12]	Matei, R., Broad, S., Goldbart, J., & Ginsborg, J. (2018). The impact of the Alexander Technique on well-being and performance in musicians. <i>Frontiers in Psychology</i> , 9 , 1–13. doi.org/10.3389/fpsyg.2018.01137
[13]	Kok, L. M., Huisstede, B. M., Voorn, V. M., Schoones, J. W., & Nelissen, R. G. (2016). The occurrence of musculoskeletal complaints among professional musicians: A systematic review. <i>International Archives of Occupational and Environmental Health</i> , 89 (3), 373–396. doi.org/10.1007/s00420-015-1090-6
[14]	Ministry of Education and Science of Mongolia. (2023). National arts education strategy 2023–2030. Government policy document. www.mecss.gov.mn/policy/arts-education-2023
[15]	Tumenjargal, T. (2021). <i>Leçons de mécanisme du mouvement appliquées à l’enseignement du violon</i> (Paris, 1884). Art in the 21st Century Youth Conference, Ulaanbaatar.
[16]	Fishbein, M., Middlestadt, S. E., Ottati, V., Straus, S., & Ellis, A. (1988). Medical problems among ICSOM musicians: Overview of a national survey. <i>APSArts</i> .
[17]	Matei, R., & Ginsborg, J. (2021). Health education for musicians: A systematic review of programs, their content, and impacts. <i>Frontiers in Psychology</i> , 12 , 698537. doi.org/10.3389/fpsyg.2021.698537
[18]	Steinmetz, A., Scheffer, I., & Münte, T. F. (2022). Prevalence and risk factors of musculoskeletal disorders in musicians: A systematic review and meta-analysis. <i>Journal of Occupational Medicine and Toxicology</i> , 17 (1), 15. doi.org/10.1186/s12995-022-00358-6
[19]	Spahn, C., Richter, B., & Zschocke, I. (2021). Health status and health behavior of musicians in German professional orchestras. <i>Medical Problems of Performing Artists</i> , 36 (2), 87–95. doi.org/10.21091/mppa.2021.2012
[20]	Visentin, P., Shan, G., & Doan, J. B. (2022). Neuromuscular control and biomechanical analysis of professional violinists. <i>Journal of Electromyography and Kinesiology</i> , 65 , 102689. doi.org/10.1016/j.jelekin.2022.102689
[21]	Steinmetz, A., Möller, H., & Seidel, E. J. (2012). Playing-related musculoskeletal disorders in music students. <i>National Library of Medicine</i> , 625–633. pubmed.ncbi.nlm.nih.gov/23138678/
[22]	Jabusch, H. C., Müller, S. V., & Altenmüller, E. (2020). Early specialization and practice-related musculoskeletal disorders in young instrumentalists. <i>Journal of Hand Therapy</i> , 33 (4), 592–601. doi.org/10.1016/j.jht.2020.03.002


[23]	Gembris, H., Menze, J., Heye, A., & Bullerjahn, C. (2020). High-performing young musicians' playing-related pain. <i>Frontiers in Psychology</i> . doi.org/10.3389/fpsyg.2020.564736
[24]	Osborne, M. S., McPherson, G. E., & Williamon, A. (2021). The psychology of music performance anxiety in young musicians. <i>Psychology of Music</i> . doi.org/10.1177/0305735620944232
[25]	Hawkes, M. E. (2018). The practical application of psychological skills training for musicians (Doctoral thesis). etheses.whiterose.ac.uk/id/eprint/24062/
[26]	Burcal, C. J., Needle, A. R., Custer, L., & Rosen, A. B. (2019). The effects of cognitive loading on motor behavior in injured individuals. <i>Sports Medicine</i> , 49 , 1233–1253. doi.org/10.1007/s40279-019-01116-7
[27]	Xu, S., & Li, D. (2025). Autonomy-supportive music teaching and students' well-being. <i>Acta Psychologica</i> , 254 , 104827. doi.org/10.1016/j.actpsy.2025.104827
[28]	Davies, J. (2020). Alexander Technique classes improve pain and performance factors. <i>Journal of Bodywork and Movement Therapies</i> , 24 (1), 1–7. doi.org/10.1016/j.jbmt.2019.04.006
[29]	Matheve, A., De Baets, S., & Timmermans, A. (2020). Integrating somatic practices in higher music education. <i>Research Studies in Music Education</i> , 42 (1), 45–62. doi.org/10.1177/1321103X20923745
[30]	Perkins, R., Reid, H., Araújo, L. S., Clark, T., & Williamon, A. (2017). Performing at the top of one's game. <i>Frontiers in Psychology</i> , 8 , 1352. doi.org/10.3389/fpsyg.2017.01352
[31]	Bat-Erdene, R. (2020). Cultural barriers to musician health education in post-socialist Mongolia. <i>Music Education Research</i> . doi.org/10.1080/14613808.2020.1847632
[32]	Perkins, R., Williamon, A., & Ginsborg, J. (2021). The hidden curriculum of pain. <i>Music Education Research</i> . doi.org/10.1080/14613808.2021.1929140
[33]	Williamon, A., & Perkins, R. (2022). A global comparison of health and wellness provision in conservatoires. In <i>The musician's body: A maintenance manual</i> . 45–62. doi.org/10.4324/9781003249264-5
[34]	Suvd, T., Namsrajav, M., Sukhbayar, B., & Erdenebileg, G.-O. (2024). Culturally responsive school leadership and education for sustainable development. <i>International Journal of Social Science and Humanities Research-MIYR</i> , 4 (1), 51–63. doi.org/10.53468/mifyr.2024.04.01.51

AUTHOR'S INTRODUCTION

1. First Author

	Enkh-Amgalan Enkhtsetseg tseegiihb@gmail.com
	Doctoral student at the Department of Educational Studies, School of Educational Studies, Mongolian National University of Education, Ulaanbaatar, Mongolia Work: Legato School of Mongolia Work field: Music education, Musician health

2. Corresponding Author

	Narantsetseg Munkhtsetseg munkhtsetseg.n@msue.edu.mn
	Senior lecturer, Department of Educational Studies, School of Educational Studies, Mongolian National University of Education, Ulaanbaatar, Mongolia Work field: Educational studies, Mathematics of education, Educational statistics.