

**QISQA MASOFAGA YUGURUVCHI SPORTCHI TALABALARNI HARAKATLANISH
TEXNIKASINI BIOMEXANIK KO'RSATKICHLARDAGI KAMCHILIKLARNI
ZAMONAVIY TEXNOLOGIYALAR YORDAMIDA BARTARAF ETISH HISOBIGA
YUGURISH TEXNIKASI TAKOMILLASHTIRISH.**

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Annotatsiya. Mazkur maqolada qisqa masofaga yuguruvchi sportchi talabalarni harakatlanish texnikasini biomexanik ko'rsatkichlardagi kamchiliklarni zamonaviy texnologiyalar yordamida bartaraf etish hisobiga yugurish texnikasi takomillashtirish haqida nazariy ma'lumot va amaliy tavsiyalar bayon etilgan.

Kalit so'zlar: Teskor-kuch, maxsus mashqlar, umumrivojlantiruvchi mashqlar, harakat tezligi, musobaqa jarayoni, nisbiy kuch.

**IMPROVEMENT OF THE RUNNING TECHNIQUE OF SHORT-DISTANCE
RUNNING STUDENT ATHLETES BY ELIMINATING DEFICIENCIES IN
BIOMECHANICAL INDICATORS WITH THE HELP OF MODERN
TECHNOLOGIES.**

Abstract. In this article, theoretical information and practical recommendations are presented on the improvement of the running technique of short-distance running student athletes by eliminating the deficiencies in biomechanical indicators with the help of modern technologies.

Key words: Strength, special exercises, general development exercises, movement speed, competition process, relative strength.

**СОВЕРШЕНСТВОВАНИЕ ТЕХНИКИ БЕГА СТУДЕНТОВ-СПОРТСМЕНОВ,
БЕГУЩИХ НА КОРОТКИЕ ДИСТАНЦИИ, ПУТЕМ УСТРАНЕНИЯ
НЕДОСТАТКОВ БИОМЕХАНИЧЕСКИХ ПОКАЗАТЕЛЕЙ С ПОМОЩЬЮ
СОВРЕМЕННЫХ ТЕХНОЛОГИЙ.**

Аннотация. В статье представлены теоретические сведения и практические рекомендации по совершенствованию техники бега студентов-спортсменов, бегущих на короткие дистанции, путем устранения недостатков биомеханических показателей с помощью современных технологий.

Ключевые слова: Сила, специальные упражнения, общеразвивающие упражнения, скорость движения, соревновательный процесс, относительная сила.

Mavzuning dolzarbligi va zarurati.

Dunyoda yengil atletikaning qisqa masofalarga yugurish turi ommalashgan sport turlaridan hisoblanadi. Sport natijalari kundan kunga o'sib borishi qisqa masofalarga yuguruvchi sportchilarni yillik tayyogarlik mashg'ulotlarini samarali taqsimlash uslubiyatini takomillashtirishni taqozo etmoqda.

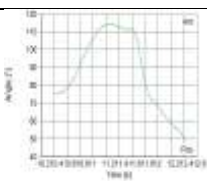

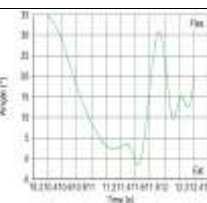

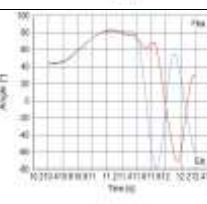

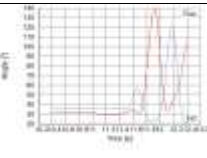

Qisqa masofaga yuguruvchilarni mashg'ulot uslubiyatini takomillashtirish bo'yicha biomexanik tahlil asosida talaba sportchilarning texnikasini takomillashtirishda biomexanik parametrlarni aniqlash va tahlil qilish bo'yicha taklif va tavsiyalar ishlab chiqishgan.

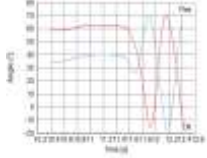



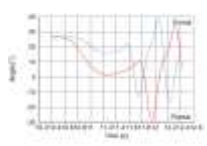

Qisqa masofaga yuguruvchilarni biomexanik tahlil asosida mashg'ulotlarda texnikani to'g'ri o'rgatish va vosita usullarni qo'llanish uslubiya e'tibor qaratib kelgan, lekin, qisqa masofalarga yuguruvchi talabalarni yillik tayyorgarlik mashg'ulotlarini taqsimlanish hajmi bo'yicha juda kam ma'lumotlar berilgan. Qisqa masofaga yuguruvchi talaba sportchilarning yaxshi sport natijasini mashg'ulot jarayoni takomillashtirish zaruriyatiga e'tibor qaratishni taqozo etadi. Bugungi kunda qisqa masofalarga yuguruvchilarning yillik tayyorgarlik bosqichini taqsimlashning yangi texnologiyasini ishlab chiqish, qo'llaniladigan vosita usullarni saralash, umumiy jismoniy tayyorgarlikining optimal nisbatlarini izlab topish, tana a'zolari parametrlarni aniqlash va tahlil qilishga e'tibor dolzarb ahamiyat kasb etadi.

Nazorat (n=14) va tajriba (n=14) guruhlariga mansub talabalarning tajriba oxirida biomexanik tahlil asosida qisqa masofaga yuguruvchilarni texnik tayyorgarligini rivojlantirishda biomexanik parametrlarini (3D Motion Analayzer» apparatida) aniqlash, tahlil qilish va natijalarini rivojlantirib borish texnik usullari bo'yicha qo'llanilgan jismoniy mashqlarni rivojlanishi, ularning tana qismlari xarakati uchun xizmat qiladi. Biz qisqa masofaga yuguruvchilarni texnik tayyorgarligini rivojlantirishda biomexanik parametrlarini talaba-sportchilarning tana qismlari va diapazon tuzilish xolatini.

1-jadval

Biomexanik tahlil ko'rsatkichlari bo'yicha qayd etilgan natijalarining asosiy statistik xarakteristikalarini («3D Motion Analayzer» apparatida) ifodaladik.

T /r	Talaba- sportchilarning tana qismlari	Tana qismlari xarakati	Chap tomon	O'ng tomon	Diapazon	Diagramma	Tana tuzilish xolati
1	Inson tanasi (ichki va tashqi burchagi)	Egiluvchanlik	0°	107°	107°		
		Yonga egilish	-180°	14°	194°		
2	Bo'yin	Egiluvchanlik	-8°	31°	39°		
		Yonga egilish	-13°	19°	32°		
		Aylanish	-4°	18°	22°		
3	Yelkalar	Egiluvchanlik	-69°	87°	156°		
		Burilishlar	0°	83°	83°		
4	Tirsaklar	Egiluvchanlik	28°	134°	162°		
5	Son	Egiluvchanlik	-14°	70°	84°		

		Burilishlar	5°	16°	21°		
6	Tizza	Egiluvchanlik	19°	110°	129°		
7	Boldir panja	Egiluvchanlik	-27°	0°	27°		

Izoh: 27° Dekart koordinatalaridagi burchak.

Inson tanasi (ichki va tashqi burchagi) 107°, bo'yin 39°, yelkalar 156°, tirsaklar 162°, son 84°, tizza 129°, boldir panja 27° ekanligi aniqlandi.

2-jadval

Biomexanik tahlil ko'rsatkichlari bo'yicha qayd etilgan natijalarining asosiy statistik xarakteristikalarini bo'yicha talaba-sportchilarning tana qismlari va diapazon tuzilishi, n=28

T/r	Biomexanik ko'rsatkichlar	Nazorat guruhi						Tajriba guruhi	t	P
		\bar{x}	σ	V, %	\bar{x}_t	σ	V, %			
1	Inson tanasi	0.21	0.008	3.8	0.12	0.009	7.5	2.3	<0.05	
2	Bo'yin	41.2	3.5	8.5	44.2	4.1	9.2	3.6	<0.01	
3	Yelkalar	88.2	4.5	5.1	91.2	5.2	5.7	3.1	<0.01	
4	Tirsaklar	52.1	4.3	8.2	56.3	5.1	9.0	4.5	<0.001	
5	Son	4.2	0.5	11.9	4.9	0.4	8.2	2.4	<0.05	
6	Tizza	38.2	2.4	6.3	33.5	3.5	10.4	6.4	<0.001	
7	Boldir panja	1.74	0.02	1.1	1.89	0.03	1.5	2.2	<0.05	

Izoh: $X_{o'rt}$ – O'rtacha arifmetik qiymat, σ – O'rtacha kvadratik og'ish, V – Variyatsiya koefitsiyenti.

Tajriba oxirida biomexanik tahlil ko'rsatkichlari bo'yicha qayd etilgan natijalarining asosiy statistik xarakteristikalarini farqlarini qo'yidagi 2-rasmda diagramma ko'rinishida ifoda etdik.

Nazorat (n=14) va tajriba (n=14) guruhlariga mansub talabalarning qisqa masofaga yugurishda biomexanik ko'rsatkichlarining qiyosiy tahlili bo'yicha tajriba oxirida kuch yuzaga kelish vaqtida qayd etilgan natijalarining asosiy statistik xarakteristikalarini inson tanasida solishtirganimizda t. student kriteriysi 2,3, $P < 0,05$ extimollik darajasini tashkil qildi.

Bo'yin diapazonida qayd etilgan natijalarining asosiy statistik xarakteristikalarini solishtirganimizda t. student kriteriysi 3,6, $P > 0,01$ extimollik darajasini tashkil qildi, yelkalar diapazonida qayd etilgan natijalarining asosiy statistik xarakteristikalarini solishtirganimizda t. student kriteriysi 3,1, $P > 0,01$ extimollik darajasini tashkil qildi, tirsaklar diapazonida qayd etilgan natijalarining asosiy statistik xarakteristikalarini solishtirganimizda t. student kriteriysi 4,5, $P > 0,001$ extimollik darajasini tashkil qildi, son diapazonida t. student kriteriysi 2,4, $P > 0,05$ extimollik darajasini tashkil qildi, tizza diapazonida qayd etilgan natijalarining asosiy statistik

xarakteristikalarini solishtirganimizda t.student kriteriysi 6,4, $P>0,001$ extimollik darajasini taskil qildi, boldir panja diapazonida qayd etilgan natijalarining asosiy statistik xarakteristikalarini solishtirganimizda t.student kriteriysi 2,2, $P>0,05$ extimollik darajasini taskil qildi

Qisqa masofaga yugurishda nazorat va tajriba guruhlariga mansub talabalarning qisqa masofaga yuguruvchilarni tajriba oxirida yugurish texnikasini biomexanik tahlil asosida (start vaqtidagi yuzaga keladigan vaqt oralig'i, start burchagi, tana va oyoqlarning joylashuvi burchagi, qadam soni uzunligi, uzunligi hamda chastotasining yugurish tezligi kabi) yugurishdagi xatto va kamchiliklarni bartaraf etish hisobiga, ularning yugurish texnikasi takomillashtirishning qiyosiy tahliliga e'tibor qaratdik.

XULOSALAR. Anketa so'rovnoma natijalarining tahlili shuni ko'rsatdiki, maxsus jismoniy tayyorgarlik darajasini takomillashtirish muammosi bo'yicha mutaxassislarning fikrlari turlicha bo'ldi: so'ralgan mutaxassislarning 77,4% antropometrik va funktsional ko'rsatkichlari bo'yicha maxsus jismoniy tayyorgarlik darajasi etarlicha yuqori emas, deb hisoblaydilar; 52%i ushbu darajani koordinatsion qobiliyatini rivojlantirish hisobiga oshirish mumkin, deb hisoblaydilar; 44%i musobaqa davrining haftalik mikrosiklida qisqa masofaga yuguruvchi sportchilarning qo'llaniladigan amaliyot kabi portlovchi kuch va ishqalanish kuch yo'nalishli yuklamalarni rejalashtirishni tavsiya qiladilar; mutaxassislarning 64%i esa buning uchun maxsus kuch tayyorgarligiga ega yuklamalardan foydalanish kerakligini ta'kidlaydilar.

Qisqa masofaga yuguruvchi yugurish texnikasini butun yil bo'yi o'rganishi va takomillashtirishi kerak. Buning uchun tezlanishli yugurishdan, to'la kuch sarflamay masofaning ma'lum qismlarini yugurib o'tishdan, shuningdek, qisqa masofa yuguruvchi mashg'ulotida muxim o'rin tutishi kerak bo'lgan maxsus tayyorlov mashqlaridan foydalanish kerak. Biomexanik parametrlarni aniqlash va tahlil qilish: qisqa masofaga yugurish texnikasining asosiy biomexanik parametrlarini aniqlash (oyoq harakati, qadam uzunligi, qadam chastotasi, tana og'irligi markazi harakati, kuchlanish burchaklari va o'zaro bog'liqliklar) yugurish jarayonida yuqori va past ko'rsatkichlarga sabab bo'luvchi texnik elementlari aniqlandi va tahlil qilindi.

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