International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition

Tian Kuo[1], Thongchat Phucharoen[2] and Wisute Tongdecharoen[3]
[1,2,3]Faculty of Sports Science and Technology, Bangkokthonburi University, Thailand
[1]E-mail: 1244818787@qq.com, ORCID ID: https://orcid.org/0009-0000-6649-3635
[2]E-mail: thongchat.phu@bkkthon.ac.th, ORCID ID: https://orcid.org/0009-0008-2601-7755
[3]E-mail: wisute.ton@bkkthon.ac.th, ORCID ID: https://orcid.org/0009-0008-5233-7533
Received 03/05/2025 Revised 23/05/2025 Accepted 27/06/2025

Abstract

Background and Aim: The development of youth basketball players faces challenges like inadequate training programs and limited access to quality coaching. There was also a lack of integration of sports science. The objectives of this research were (1) to explore the factors of training for the basketball team based on performance analysis of the men's basketball World Cup 2023 competition. (2) to develop a training program for the basketball youth player. (3) to evaluate the effectiveness of the training program for the youth player.

Materials and Methods: This study was a research and development phase 1 to explore the personal technique of 32 teams with a survey method and 8 teams in the quarterfinal with game analysis by a computer program analysis of the team technique of the Men's Basketball World Cup 2023 competition. Phase 2 to develop a training program for the basketball youth player based on performance analysis was conducted with a focus group by the snowball method with eleven experts, and Phase 3 to evaluate the effectiveness of the training program for the youth player was conducted with the connoisseurship method with seven experts. The research instrument was a semi-structured interview and an evaluation of effectiveness questionnaire. Data analysis was mean and standard deviation, one-way ANOVA, and a significant difference set at .05.

Results: The results found that (1) player position analysis centers show higher 2P% and FG%. 3P% shows no position differences, challenging traditional role expectations. (2) Training program structure that emphasizes a periodized approach with balanced strength, skill, tactical training, and appropriate recovery protocols. (3) Expert Evaluation Results: The program received a high rating (4.61±0.73), with strength conditioning scoring highest (4.86±0.38).

Conclusion: The basketball training program, developed through a three-phase research approach analyzing 2023 World Cup data, received outstanding expert validation (4.61±0.73). The analysis of player performance showed important differences in 2P%, FG%, rebounds, blocks, assists, and steals, which helped create a training plan that includes excellent strength conditioning.

Keywords: Training Program; Youth Basketball Athletes; Statistical Game Analysis

Introduction

The development of youth basketball players in China faces several challenges that hinder their performance and growth. Key issues include a lack of structured training programs, insufficient access to quality coaching, and limited exposure to competitive environments. Research indicates that many young athletes struggle with fundamental skills due to inadequate training methodologies that do not align with modern basketball demands (Zhang & Wang, 2021). Furthermore, the emphasis on winning at early ages often leads to burnout and discouragement among youth players, which can negatively impact their long-term engagement in the sport (Li & Wang, 2020). Additionally, the integration of sport science into training regimens was often overlooked, resulting in a gap between physical conditioning and skill development (Chen et al., 2022). This disconnect can lead to injuries and decreased performance levels, as players are not adequately prepared for the physical and mental demands of the game. Moreover, the lack of a systematic approach to game analysis limits players' understanding of tactical aspects, which was crucial for their development (Liu et al., 2023).

Effective basketball training was essential for developing key skills and attributes in youth players. Research highlights several critical components that contribute to successful training outcomes. For instance, systematic skill development, including shooting, dribbling, and defensive techniques, was foundational for young athletes (Smith & Jones, 2020). Additionally, incorporating strength and

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

conditioning programs tailored to the specific needs of youth players can enhance their physical capabilities and reduce injury risks (Brown et al., 2021). Moreover, the role of mental training and psychological resilience was increasingly recognized as vital for young athletes. Studies suggest that mental toughness and focus can significantly impact performance, especially in high-pressure situations (Williams & Cumming, 2022). Furthermore, game-based training approaches that simulate real-game scenarios have been shown to improve decision-making skills and tactical awareness (Miller & Cumming, 2023). The integration of technology, such as video analysis and performance tracking, also plays a crucial role in modern basketball training, allowing coaches to provide immediate feedback and tailor training sessions to individual player needs (Johnson & Williams, 2021). Overall, a holistic approach that combines physical, technical, and psychological training is essential for developing well-rounded youth basketball players.

Promoting basketball among youth players requires a multifaceted approach that engages players, coaches, and the community. One effective strategy was to create grassroots programs that introduce basketball at an early age, emphasizing fun and skill development rather than competition (Lee & Kim, 2020). Community engagement through local clubs and schools can foster a supportive environment that encourages participation. Additionally, leveraging social media and digital platforms can enhance visibility and interest in basketball. Highlighting success stories of local athletes and sharing training tips can inspire young players to pursue the sport (Garcia, M., & Tran, 2021). Organizing youth tournaments and clinics led by experienced coaches can also provide valuable exposure and experience for young athletes, helping them develop their skills in a competitive setting (Huang & Gao, 2019). Furthermore, partnerships with professional teams can create mentorship opportunities, allowing youth players to learn from role models in the sport (Nguyen & Tran, 2023).

Creating an effective basketball training program for youth players involves several key steps. First, it was essential to conduct a needs assessment to identify the specific skills and physical attributes that require development (Smith et al., 2020). This assessment should consider the players' age, skill level, and physical condition. Next, the training program should incorporate a variety of drills that focus on fundamental skills such as shooting, passing, and dribbling, while also integrating strength and conditioning exercises to enhance overall athleticism (Brown et al., 2021). Moreover, incorporating game-like scenarios into training sessions can help players apply their skills in realistic contexts, improving their decision-making and tactical understanding (Miller et al., 2023). Regular evaluation and feedback were crucial for monitoring progress and making necessary adjustments to the training program. Utilizing technology, such as performance tracking tools, can aid in this process (Johnson & Kim, 2021). Finally, fostering a positive training environment that encourages teamwork, resilience, and a love for the game was vital for the long-term development of youth players (Williams & Cumming, 2022).

The research on developing a basketball training program based on game analysis from the Men's Basketball World Cup 2023 highlights significant gaps, particularly in the integration of sport science and practical training methodologies for youth athletes. Further studies were needed to explore effective strategies for bridging these gaps and enhancing player development.

Objectives

The study objectives follow as

1. To explore the factors of training for the basketball team based on performance analysis of the men's basketball World Cup 2023 competition.

2. To develop the training program for the basketball youth player based on performance analysis of the Men's Basketball World Cup 2023 competition.

3. To evaluate the effectiveness of the training program for the basketball youth player.

Literature review

Game Analysis Methodologies and The Application to Youth Development.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Game analysis in basketball has evolved significantly with technological advances, offering valuable insights for youth development programs. Time-motion analysis reveals that elite basketball players cover 4-6 km per game with approximately 1,000 direction changes (Scanlan et al., 2021). World Cup 2023 data highlighted the importance of efficient transition play, with successful teams converting 60-65% of fast break opportunities (Ibáñez et al., 2023). Performance indicators from elite competitions provide frameworks for youth development. During the 2023 World Cup, teams averaged 83.5 possessions per game with successful teams demonstrating higher shooting efficiency (>45% effective field goal percentage) and assist-to-turnover ratios (>1.5) (Zhang et al., 2022). These metrics establish benchmarks for progressive skill development in youth athletes. Video analysis tools identify tactical patterns that can be adapted for age-appropriate learning. The 2023 World Cup featured increased ball-screen actions (28.7 per game) and off-ball screens (32.3 per game), emphasizing basketball's evolving tactical complexity (Marmarinos et al., 2023). Youth programs should progressively introduce these concepts based on developmental readiness. Technology integration in youth development allows for objective tracking of progress. Using simplified metrics from elite competitions helps young athletes understand game principles while developing fundamentals. As Torres et al. (2022) emphasized, "Adaptation of elite-level analysis to youth contexts requires simplification without compromising the foundational principles that define successful basketball performance."

For youth basketball, game analysis must be modified to focus on process rather than outcome, emphasizing skill acquisition over results. This aligns with Memmert and Roca's (2019) finding that early tactical awareness coupled with fundamental skill development accelerates basketball IQ in developing athletes.

Physical and Basketball Technical Development Considerations Based on LTAD. Long-Term Athlete Development (LTAD) models provide structured frameworks for youth basketball development while accounting for biological maturation. The Fundamental stage (6-9 years) focuses on movement literacy and basketball introduction through modified games, while the Train-to-Train phase (11-14 years) emphasizes sport-specific skills and game understanding (Lloyd et al., 2022). Physical development needs vary significantly between youth age groups. During the adolescent growth spurt, neuromuscular training becomes critical for injury prevention and coordination development. Data from elite players at the 2023 World Cup showed average vertical jump heights of 71.3 cm and repeated sprint ability as key performance indicators (Hopkins et al., 2023). These metrics guide the progressive development of physical capabilities in youth athletes. Technical skill acquisition should follow developmental windows. Ball handling proficiency in World Cup players (average 8.4 turnovers per 100 possessions) demonstrates mastery through thousands of practice repetitions (Zhang et al., 2024). For youth, this translates to age-appropriate skill progressions focused on fundamentals before advanced techniques. Resistance training adaptation was crucial but requires careful implementation based on maturation. As Faigenbaum et al. (2020) noted, "Properly designed resistance training enhances basketball-specific movements while reducing injury risk when progression follows biological rather than chronological age." Elite players' strength profiles from the World Cup provide aspirational targets while recognizing developmental constraints in youth athletes.

Integration of sport science principles into youth basketball was gaining traction. Monitoring training loads through RPE (Rating of Perceived Exertion) and simplified wellness questionnaires helps prevent overtraining while optimizing development (Scanlan et al., 2021). The intermittent high-intensity nature of basketball (World Cup games averaging 40-60 high-intensity efforts) requires progressive conditioning programs for youth that match biological readiness while developing sport-specific fitness (Torres et al., 2022).

Principles of Developing Training Programs

Effective youth basketball training programs require periodization strategies that balance skill acquisition with appropriate physical development. Analyzing World Cup 2023 data reveals professional players perform approximately 800-1,000 decision-making actions per game (Ibáñez et al., 2023). Youth

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

programs should gradually increase decision-making opportunities through small-sided games and modified scrimmages that approximate game conditions while maintaining appropriate challenge levels. Training programs must incorporate deliberate practice elements targeting specific skills highlighted in elite competitions. The 2023 World Cup showcased the importance of three-point shooting (teams averaging 27.8 attempts per game) and defensive versatility (Hopkins et al., 2023). Youth development should progressively introduce these elements while prioritizing fundamental movement patterns and basic basketball skills. Tactical development follows a natural progression from simple to complex. World Cup analysis demonstrated that successful teams utilized an average of 8.4 different offensive sets (Zhang et al., 2024). Youth programs should introduce tactical concepts incrementally, beginning with spacing principles before advancing to complex actions seen in elite competitions. Monitoring and evaluation were crucial components of effective development programs. As Marmarinos et al. (2023) observed, "Regular assessment using age-appropriate metrics derived from elite performance models accelerates development while identifying individual needs." Training programs should establish baseline measurements and track progress using simplified versions of elite performance indicators. The coach-athlete relationship significantly impacts development effectiveness. Training sessions should maintain high engagement levels through appropriate work-to-rest ratios like game demands (1:3 to 1:5) observed in the World Cup (Scanlan et al., 2021). This approach maximizes athlete engagement while providing sufficient recovery.

Integration of play-based learning with structured skill development optimizes youth engagement. As Memmert and Roca (2019) noted, "Creative play coupled with deliberate practice creates optimal learning environments for basketball skill acquisition." The most effective youth programs balance structured development with game-like scenarios that foster both skill acquisition and basketball IQ development.

Conceptual Framework

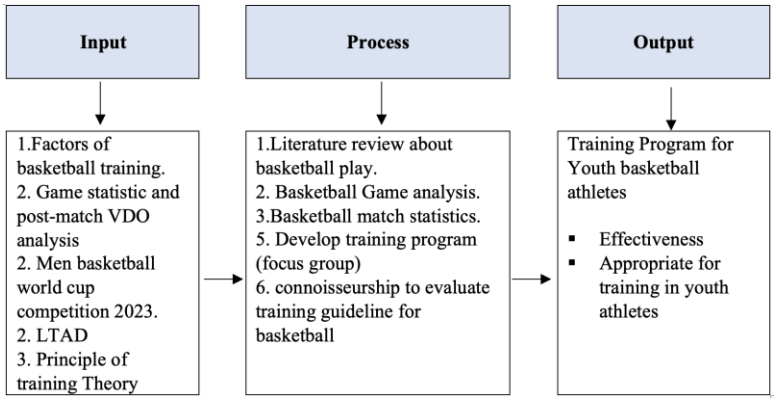

Figure 1 Conceptual Framework

Methodology

This study was a quasi-experimental research. This research had been certified for human research by the Human Research Review Committee of Bangkokthonburi University, document number 2567/164 (14), date of certification: 9 October 2024. The researcher had proceeded according to the following research processes:

Population and sample:

The population of this study was the men's teams of the 2023 FIBA World Cup. Through effective screening of these 32 participating teams with 384 total players, the secondary data, which was published by the FIBA website, follows as,

Sample: The sample was a purposive simple sampling of eight teams in the quarter-final game with 84 players.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

1. Inclusion criteria of this:

1.1 Must be a male basketball player in the Basketball World Cup 2023 competition.

1.2 Must be a person who had a score of at least one for each evaluation item, as defined in FIBA.

Participants for focus group: In this study, eleven experts were used to provide opinions on the development of basketball training guidelines for youth, which were obtained using the snowball sampling method: two international coaches, five youth basketball coaches, two physical education instructors, and two sport scientists with 10 years of experience in the training field.

Participants for connoisseurship: To assess the appropriateness and possibility of implementing the basketball training program guidelines created to practice in the real situation, it was appropriate and possible by using seven experts to analyze the training program, which consisted of one expert in a focus group, five basketball coaches, and one sports scientist.

Research instrument

1. The basketball statistics survey form consists of individual and team statistics, including personal statistics, 2-point percentage, 3-point percentage, free throw percentage, field goal percentage, points per game, rebounds per game, blocks per game, and assists per game. The computer program for games analyzes team techniques, pick and roll, drives to the basket, communication plays, double teams, fast breaks, isolation plays, team ball movement, transition plays, post-up plays, off-ball screens, and supporting cast plays.

2. The semi-structured questionnaire for experts in creating basketball training guidelines for youth is divided into two parts: Part one includes personal information, and Part two includes training components, training activities, and training intensity. The questionnaire was developed by the researcher from reviewing related documents, which were used to design the questionnaire. It was then presented to the advisor for approval. After that, it was submitted to experts to evaluate its validity using the Index of Item-Objective Congruence (IOC) assessment form, which yielded an IOC value of .80-1.00.

3. Questionnaire for experts to evaluate the effectiveness of youth basketball training methods, divided into two parts: Part 1: Personal information and Part 2: Evaluation of training components, training activities, and training intensity, which were developed by the researcher from a review of relevant documents, used in designing the questionnaire, and then presented to the advisor for consideration and approval. Then, it was taken to the expert to evaluate the validity using the Index of Item-Objective Congruence (IOC) assessment form, which gave an IOC value of .80-1.00.

Research process

The research process of this study consisted of 4 phases that were summarized in the figure below.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

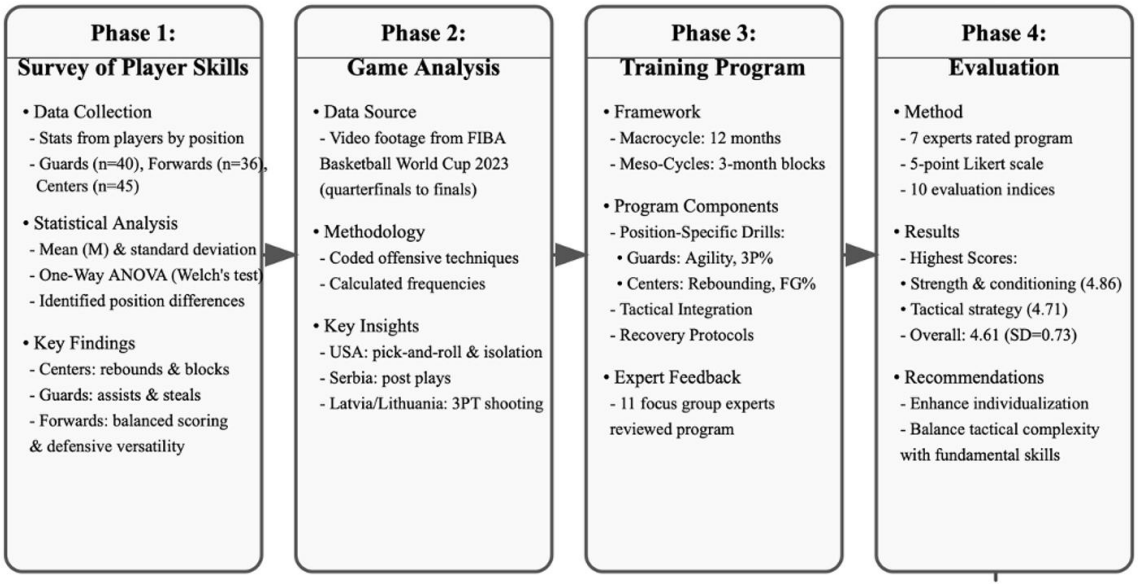

Figure 2 The research process of the mixed method of this study.

Data analysis

The data analysis with statistics in this study is as follows:

1. Mean, standard deviation, and percentages
2. Compare the mean difference of player position with One-Way ANOVA (Welch's) and pairwise post hoc with Games-Howell.
3. The significant difference was set at .05.

Results

Results comprehensively address objectives, reporting surveys, video analysis, guideline development, and expert evaluation. Ensure tables are clearly labeled, report exact p-values, and link each finding back to its corresponding objective in the narrative.

PART 1 TO SURVEY THE PERSONAL SKILLS OF A BASKETBALL PLAYER

Table 1 Mean of score statistics with different position players

Variables	Position of the player		
	Guard	Forward	Center
	M± SD	M± SD	M± SD
2 Points Percentage (2P%)	55.47±5.14	62.38±4.03	53.16±8.98
3 Points Percentage (3P%)	33.45±11.78	35.80±14.11	39.25±16.60
Free throw Percentage (FP%)	75.46±9.72	78.73±9.84	71.23±13.67
Field Goal Percentage (FG%)	44.69±8.03	48.51±7.85	53.64±6.64

From table 1, it was found that the 2-point percentage of different player positions, guard, forward, and center, were 55.47±5.14, 62.38±4.0, and 53.16±8.98. 3-Points Percentage were 33.45±11.78, 35.80±14.11, and 39.25±16.60. Free throw percentages were 75.46±9.72, 78.73±9.84, and 71.23±13.67. Field Goal Percentage was 44.69±8.03, 48.51±7.85, and 53.64±6.64, respectively.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Table 2 Comparison of score statistics between positions with One-Way ANOVA (Welch's)

Variables	position		Games-Howell Mean Difference	p	M±SD	F	p
2Points Percentage (2P%)	Guard (n=9)	Forward	-6.91	.05*	55.47±5.14	5.49	.02*
		Center	2.31	.74			
	Forward (n=5)	Guard	-6.91	.05*	62.38±4.03		
		Center	9.22	.03*			
	Center (n=12)	Guard	-2.31	.74	53.16±8.98		
		Forward	-9.22	.03*			
3 Points Percentage (3P%)	Guard (n=28)	Forward	-2.35	.81	33.45±11.78	0.34	.72
		Center	-5.80	.79			
	Forward (n=21)	Guard	2.35	.81	35.80±14.11		
		Center	-3.45	.92			
	Center (n=4)	Guard	5.80	.79	39.25±16.60		
		Forward	3.45	.92			
Free throw Percentage (FP%)	Guard (n=9)	Forward	-3.28	.80	75.46±9.72	0.89	.43
		Center	4.22	.67			
	Forward (n=6)	Guard	3.28	.80	78.73±9.84		
		Center	7.50	.39			
	Center (n=13)	Guard	-4.22	.67	71.23±13.67		
		Forward	-7.50	.39			
Field Goal Percentage (FG%)	Guard (n=16)	Forward	-3.82	.52	44.69±8.03	4.82	.02*
		Center	-8.94	.01*			
	Forward (n=8)	Guard	3.82	.52	48.51±7.85		
		Center	-5.12	.32			
	Center (n=11)	Guard	8.94	.01*	53.64±6.64		
		Forward	5.12	.32			

*p<.05

From Table 2, it was found that 2P% and FG% were significantly different (*p<.05), but 3P% and FP% were not significantly different.

Table 3 Means and standard deviation of points per game, rebounds, blocks, assists, steals, and double team with different player positions.

Variables	Position of the player		
	Guard (n=40)	Forward(n=36)	Center (n=45)
	M± SD	M± SD	M± SD
Point per game (PPG)	9.29±6.13	7.97±4.28	7.42±4.94
Rebounds Per Game (RPG)	2.46±1.60	3.47±1.74	4.52±2.57
Block per game (BPG)	0.11±0.22	0.39±0.42	0.62±0.55

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Variables	Position of the player		
	Guard (n=40)	Forward(n=36)	Center (n=45)
	M± SD	M± SD	M± SD
Assistance per game (APG)	3.19±2.20	1.33±0.84	1.03±0.86
Steals Per Game (SPG)	0.87±0.53	0.64±0.39	0.53±0.48
Double team (DBL)	0.23±0.70	0.11±0.32	0.47±0.94

From table 3 found that point per game, rebound, block, assistance, steals, and double team with difference player position, guard, forward and center follow as, Point per game (PPG) were 9.29±6.13, 7.97±4.28, and 7.42±4.94, Rebounds Per Game (RPG) were 2.46±1.60, 3.47±1.74, and 4.52±2.57, Block per game (BPG) were 0.11±0.22, 0.39±0.42, and 0.62±0.55, Assistance per game (APG) were 3.19±2.20, 1.33±0.84, and 1.03±0.86, Steals Per Game (SPG) were 0.87±0.53, 0.64±0.39, and 0.53±0.48, and Double team (DBL) were 0.23±0.70, 0.11±0.32, and 0.47±0.94, respectively.

Table 4 Comparison of points per game, rebounds, blocks, assists, steals, and double team between positions with One-Way ANOVA (Welch's)

Variables	position		Games-Howell		M±SD	F	p
			Mean Difference	p			
Points Per Game	Guard	Forward	1.31	.52	9.29±6.13	1.18	.31
		Center	1.87	.28			
	Forward	Guard	1.31	.52	7.97±4.28		
		Center	0.56	.85			
	Center	Guard	1.87	.28	7.42±4.94		
Rebounds Per Game	Guard	Forward	-1.00	.03*	2.46±1.60	10.50	.01*
		Center	-2.06	.01*			
	Forward	Guard	1.00	.03*	3.47±1.74		
		Center	-1.06	.08			
	Center	Guard	2.06	.01*	4.52±2.57		
		Forward	1.00	.08			
Block per game	Guard	Forward	-0.28	.01*	0.11±0.22	20.05	.01*
		Center	-0.51	.01*			
	Forward	Guard	0.28	.01*	0.39±0.42		
		Center	-0.23	.09			
	Center	Guard	0.51	.01*	0.62±0.55		
		Forward	0.23	.09			
Assistance Per Game	Guard	Forward	1.85	.01*	3.19±2.20	16.86	.01*
		Center	2.16	.01*			
	Forward	Guard	1.00	.03*	1.33±0.84		
		Center	0.30	.25			
	Center	Guard	-2.16	.01*	1.03±0.86		

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Variables	position		Games-Howell Mean Difference	p	M±SD	F	p
		Forward	0.30	.25			
Steals Per Game	Guard	Forward	0.23	.08	0.87±0.53	4.74	.01*
		Center	0.34	.01*			
	Forward	Guard	0.23	.08	0.64±0.39		
		Center	0.11	.53			
	Center	Guard	0.34	.01*	0.53±0.48		
Double team per game (DBL)	Guard	Forward	0.23	.08	0.23±0.70	2.93	.01*
		Center	0.34	.01*			
	Forward	Guard	0.23	.08	0.11±0.32		
		Center	0.11	.53			
	Center	Guard	0.34	.01*	0.47±0.94		

P<.05

Table 4 found that Rebounds Per Game, Blocks Per Game, Assists Per Game, Steals Per Game, and Double Team Per Game were significantly different (*p<.05), but Points Per Game was not significantly different.

PART 2 GAME ANALYSIS WITH VDO AFTER MATCH COMPETITION

Based on the data from the FIBA Basketball World Cup 2023 quarterfinals, semifinals, and finals, a comprehensive summary of team techniques and frequencies across the analyzed games is provided. Summarizes the frequency of offensive techniques used by different basketball teams. Pick and roll and drive plays were the most common strategies, with the USA showing the highest usage in both. Coordination plays were also frequently employed across teams, particularly by the USA and Canada. Isolation and transition plays were more team-specific, with the USA relying heavily on isolation and Canada on transition. Post plays were utilized by several teams, notably Serbia and Latvia. 3PT shooting was prominent in Latvia and Lithuania, while off-ball screens were more frequent in Germany and Canada. The table highlights the varied offensive approaches of different teams in basketball.

Table 5 The Offensive Techniques by each team

Team	Pick and Roll	Drive	Coordination Plays	Isolation	Transition	Post Play	3PT Shooting	Off-ball Screens
Germany	34	28	15	4	7	8	-	-
Serbia	38	22	15	-	-	12	-	3
USA	49	39	28	26	21	-	13	-
Canada	27	34	26	5	16	-	-	7
Lithuania	8	10	14	-	8	9	15	-

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Team	Pick and Roll	Drive	Coordination Plays	Isolation	Transition	Post Play	3PT Shooting	Off-ball Screens
Slovenia	24	30	17	19	-	8	13	-
Latvia	14	-	30	-	-	12	18	-
Italy	6	5	7	4	-	-	-	-
Total	**200**	**168**	**152**	**58**	**52**	**49**	**59**	**10**

Table 5 found that Pick and Roll Usage: USA employed this technique most frequently (49 instances), Serbia (38), and Germany (34) also heavily relied on this strategy, and Italy showed the lowest frequency (6). Driving to the Basket: USA led with 39 recorded drives, Canada (34) and Slovenia (30) also emphasized this technique, and Italy struggled with only 5 successful drives. Coordination Plays: USA (28) and Canada (26) demonstrated the highest level of team coordination, and all teams showed some level of coordinated offensive sets. Isolation Plays: USA utilized isolation most frequently (26 instances), and Slovenia (19).

PART 3 DEVELOPMENT OF TRAINING PROGRAM

The focus group of 11 experts concluded that the basketball training program had a strong foundation in training theory, particularly in its periodization and position-specific training. The program effectively incorporates LTAD principles and demonstrates international awareness by integrating FIBA tactical elements.

However, the experts also identified areas for improvement. These include the need for more individualization to accommodate different developmental stages, better management of recovery protocols, and a more balanced approach to tactical complexity and fundamental skill development. Concerns were raised about potential overemphasis on complex tactics before athletes master basic skills, and the importance of addressing psychological development alongside physical training.

Basketball Training Program for Youth Player: Periodization Macrocycle for Basketball Training

This macrocycle ensures a structured, research-driven approach to optimizing player performance across all positions and team strategies.

Table 6 Basketball Training Program for Youth Player Periodization Macrocycle for Basketball Training

Training Factors	Preparation Phase (Months 1-3: Off-Season)	Pre-Competition Phase (Months 4-6: Pre-Season)	Competition Phase (Months 7-10: In-Season)	Transition Phase (Months 11-12: Post-Season)
Strength & Conditioning	**- High volume**: Build foundational strength, endurance, and injury resilience. - Position-specific focus: Guards (agility, speed),	**- Moderate volume**: Shift to sport-specific power and explosiveness. - Plyometrics for guards, resistance training for centers.	**- Low volume**: Maintenance of strength and injury prevention. - Focus on recovery between games.	**- Active recovery**: Light aerobic exercises, yoga, mobility work.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Training Factors	Preparation Phase (Months 1-3: Off-Season)	Pre-Competition Phase (Months 4-6: Pre-Season)	Competition Phase (Months 7-10: In-Season)	Transition Phase (Months 11-12: Post-Season)
	Forwards (power, balance), Centers (vertical jump, core stability).			
Skill Development	- **General skills**: Ball-handling, shooting fundamentals, footwork. - Position-specific drills: Guards (3P%, assists), Centers (post moves, FG%).	- **Advanced skills**: Pick-and-roll execution, isolation plays, transition offense. - Guards: Drive-and-kick drills; Centers: Rebounding/block timing.	- **Game-specific refinement**: High-pressure shooting, late-game scenarios. - Positional role reinforcement (e.g., guards as playmakers).	- **Skill correction**: Address weaknesses identified during the season (e.g., free throw %).
Tactical Training	- **Team systems**: Introduce offensive sets (pick-and-roll, coordination plays) and defensive principles.	- **Intensive tactical drills**: Simulate FIBA-level strategies (isolation, transition plays). - Serbia-style post plays; USA-style fast breaks.	- **In-game adjustments**: Adapt to opponents' strategies. - Focus on double-team defense and steals.	- **Review & analysis**: Analyze season performance and update playbook.
Mental Conditioning	- **Resilience training**: Visualization, stress management.	- **Decision-making under fatigue**: Simulate high-pressure scenarios.	- **Focus maintenance**: Pre-game routines, in-game concentration.	- **Reflection & goal setting**: Plan for next cycle.
Recovery	- **Active recovery**: Light swimming, stretching.	- **Increased focus**: Foam rolling, cryotherapy.	- **Prioritized recovery**: Hydration, sleep optimization, and massage.	- **Full rest**: Mental and physical downtime.
Team Coordination	- **Basic teamwork**: Build chemistry through small-sided games.	- **Complex plays**: Implement FIBA World Cup strategies (e.g., Canada's transition plays).	- **Synchronization**: Refine timing for pick-and-roll and off-ball screens.	- **Team bonding**: Non-basketball activities to strengthen cohesion.

Key Insights from survey and game analysis Integration:

1. Position-Specific Focus:

1.1 Guards: Prioritize agility, 3P% improvement, and assist-driven drills.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

1.2 Forwards: Balance scoring (2P%) and defensive versatility (steals, double teams).

1.3 Centers: Maximize rebounding, FG%, and shot-blocking efficiency.

2. Tactical Emphasis:

2.1 Mirror high-performing strategies from FIBA analysis (USA's pick-and-roll, Serbia's post plays).

2.2 Incorporate Latvia/Lithuania's 3PT shooting drills for perimeter players.

3. Statistical Priorities:

3.1 Address significant gaps (rebounds, blocks) through targeted drills.

3.2 Use isolation plays (USA/Slovenia model) for star player development.

4. Recovery & Longevity: Align recovery protocols with phase demands to reduce injury risks (high-intensity blocks in pre-season).

Meso-Cycle 1: Table for Preparation Phase (Months 1-3: Off-Season) This meso-cycle structure aligns with the macrocycle's goals, ensuring youth athletes develop holistically while addressing gaps identified for part 1 (rebounds, 3P%).

Table 7 Meso-Cycle 1: Table for Preparation Phase (Months 1-3: Off-Season)

Training Factors	**Meso-Cycle 1: Month 1** ***(Foundational Adaptation)***	**Meso-Cycle 2: Month 2** ***(Progressive Overload)***	**Meso-Cycle 3: Month 3** ***Position-Specific Mastery)***
Strength & Conditioning	- General strength: Full-body resistance training (squats, lunges). - Agility drills: Ladder work for guards, box jumps for centers. - Endurance: Moderate-intensity cardio.	- Position-specific: Guards (lateral speed), Forwards (power cleans), Centers (plyometric jumps). - Core stability: Planks, medicine ball rotations.	- Peak strength: Heavy lifts (deadlifts, bench press). - Explosiveness: Position-specific sprints (guards: shuttle runs; centers: vertical leap drills).
Skill Development	- Ball-handling basics: Dribbling drills (stationary/moving). - Shooting form: Free throws, mid-range shots. - Footwork: Triple-threat stance, pivoting.	- Advanced drills: Guards (3P% off screens), Forwards (2P% post-ups), Centers (hook shots). - Passing: No-look passes, outlet passes.	- Game simulations: Position-specific scenarios (guards: pick-and-roll assists; centers: rebounding battles).
Tactical Training	- Introduction to systems: Basic pick-and-roll, defensive rotations. - Team principles: Spacing, communication.	- Complex sets: Serbia-style post plays, USA-style fast breaks. - Defensive schemes: Double-team drills, steal techniques.	- FIBA strategies: Latvia/Lithuania 3PT plays, Slovenia isolation sets. - Live 5v5: Apply learned tactics.
Mental Conditioning	- Visualization: Imagining game scenarios. - Stress management: Breathing exercises.	- Decision-making: Simulated pressure situations (e.g., clock running out). - Focus drills: Distraction-free shooting.	- Resilience training: Handling mistakes, maintaining composure during fatigue.
Recovery	- Active recovery: Swimming, dynamic	- Foam rolling: Targeted muscle groups.	- Yoga/mobility: Focus on flexibility for injury

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Training Factors	Meso-Cycle 1: Month 1 *(Foundational Adaptation)*	Meso-Cycle 2: Month 2 *(Progressive Overload)*	Meso-Cycle 3: Month 3 *Position-Specific Mastery)*
	stretching. - Hydration/nutrition: Education on recovery foods.	- Cryotherapy: 1 session/week.	prevention. - Sleep optimization: 8-10 hours/night.
Team Coordination	- Small-sided games: 3v3 half-court. - Chemistry-building: Partner passing drills.	- 5v5 scrimmages: Emphasize pick-and-roll execution. - Role clarity: Assign positional responsibilities.	- Full-court strategies: Transition offense/defense. - Leadership drills: Captains lead warm-ups.

Key Notes

1. Progression Logic:

1.1 Month 1: Build foundational fitness and skills.

1.2 Month 2: Increase intensity with position-specific demands.

1.3 Month 3: Refine advanced techniques and integrate FIBA-level strategies.

2. Research Integration:

2.1 Guards: Prioritize agility and 3P% (Latvia shooting drills).

2.2 Centers: Focus on FG% and rebounding (Serbia post-play influence).

2.3 Forwards: Balance 2P% scoring and defensive versatility (double-team drills).

3. Color Coding:

3.1 Meso 1 (Pink): Foundational adaptation.

3.2 Meso 2 (Blue): Progressive overload.

3.3 Meso 3 (Green): Position-specific mastery.

Meso-Cycle 2: Table for pre-competition phase (months 4-6: pre-season)

This meso-cycle aligns with the pre-competition phase's goals, bridging foundational training to in-season demands while addressing gaps in rebounds, blocks, and 3P% identified in the research.

Table 8 Meso-Cycle 2: Table for pre-competition phase (months 4-6: pre-season)

Training Factors	Meso-Cycle 4: Month 4 *Sport-Specific Foundation)*	Meso-Cycle 5: Month 5 *Intensity & Complexity)*	Meso-Cycle 6: Month 6 *Game Readiness)*
Strength & Conditioning	- Sport-specific power: Guards (plyometric jumps), Centers (resistance band work). - Explosive starts: Sled pushes forward.	- Position-specific explosiveness: Guards (ladder sprints), Centers (weighted vertical jumps). - Endurance: HIIT circuits.	- Peak power: Olympic lifts (cleans, snatches). - Injury resilience: Balance drills (Bosu ball).
Skill Development	- Pick-and-roll basics: Guard-center partnerships. - Isolation footwork: Forwards (1v1 drives). - Transition layups.	- Advanced transition offense: Fast-break passing. - Isolation mastery: Guards (step-back 3PT), Forwards (spin moves).	- Game-speed execution: Live 3v2 transitions. - Clutch shooting: Free throws under fatigue.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Training Factors	Meso-Cycle 4: Month 4 *Sport-Specific Foundation)*	Meso-Cycle 5: Month 5 *Intensity & Complexity)*	Meso-Cycle 6: Month 6 *Game Readiness)*
Tactical Training	- FIBA strategies: Serbia post plays (5v0 drills). - USA fast breaks: Full-court passing.	- Latvia 3PT sets: Off-ball screens for guards. - Slovenia isolation sets: Star player focus.	- Opponent-specific prep: Scouting-based drills. - Double-team escapes: Centers vs. defenders.
Mental Conditioning	- Pressure simulation: Free throws with crowd noise. - Decision-making: 2-for-1 endgame scenarios.	- Fatigue management: Drills post-conditioning. - Visualization: Pre-play execution.	- Composure under stress: Over time simulations. - Leadership focus: Captains directing plays.
Recovery	- Foam rolling: Focus on legs and shoulders. - Cryotherapy: 2 sessions/week.	- Dynamic stretching: Pre/post-training. - Hydration protocols: Electrolyte monitoring.	- Contrast baths: Hot/cold immersion. - Massage therapy: Targeted muscle recovery.
Team Coordination	- FIBA plays: Canada's transition sets (3v2 drills). - Role integration: Forwards as screeners.	- 5v5 simulations: Serbia post plays vs. USA fast breaks. - Communication drills: Silent scrimmages.	- Full-game rehearsals: Referee-included matches. - Situational roles: Clutch play assignments.

Key Notes

1. Progression Logic:
   1.1 Month 4: Establish sport-specific power and FIBA tactical basics.
   1.2 Month 5: Increase complexity with advanced strategies and fatigue management.
   1.3 Month 6: Refine game-readiness through opponent-specific prep and peak performance.
2. Research Integration:
   2.2 Guards: Latvia 3PT shooting drills, isolation plays (Slovenia model).
   2.3 Centers: Serbia post-play dominance, rebounding/block timing.
   2.4 Forwards: Defensive versatility (double teams) and 2P% scoring.
3. Color Coding:
   3.1 Meso 4 (Pink): Sport-specific foundation.
   3.2 Meso 5 (Blue): Intensity & complexity.
   3.3 Meso 6 (Green): Game readiness.

Meso-Cycle 3: Table for Competition Phase (Months 7-10: In-Season)

This meso-cycle ensures athletes maintain peak form during the season while addressing gaps in rebounds, blocks, and clutch execution identified in the research. Tactics align with FIBA strategies (USA pick-and-roll, Latvia 3PT), and recovery protocols prioritize longevity.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

Table 8 Meso-Cycle 3: Table for Competition Phase (Months 7-10: In-Season)

Training Factors	**Meso-Cycle 7: Month 7** ***(Maintenance & Adaptation)***	**Meso-Cycle 8: Month 8** ***(Tactical Refinement)***	**Meso-Cycle 9: Month 9** ***(Peak Performance)***
Strength & Conditioning	- Low-volume maintenance: Bodyweight circuits (push-ups, lunges). - Injury prevention: Mobility drills (hip openers, shoulder stability).	- Sport-specific power: Guards (explosive sprints), Centers (light resistance band work). - Recovery focus: Foam rolling post-games.	- Peak readiness: Dynamic stretching pre-game. - Fatigue management: Yoga for muscle recovery.
Skill Development	- Positional reinforcement: Guards (playmaking drills), Centers (FG% post moves). - Free throw consistency.	- High-pressure scenarios: Clutch shooting (last-second 3PT). - Role-specific drills: Forwards (2P% mid-range under defense).	- Late-game execution: Simulated overtime plays. - Star player focus: Isolation plays (USA/Slovenia model).
Tactical Training	- Basic adjustments: Counter common opponent strategies. - Double-team defense: Centers vs. guards.	- Advanced strategies: Latvia 3PT off-ball screens, Serbia post-play counters. - Steal techniques: Guard-forward traps.	- Opponent-specific prep: Scouting-based game plans. - Adaptive play calling: Real-time adjustments during scrimmages.
Mental Conditioning	- Pre-game routines: Visualization of defensive assignments. - Focus drills: Silent free-throw sessions.	- In-game concentration: Distraction simulations (crowd noise). - Leadership focus: Captains directing plays under pressure.	- Composure drills: "Game-winning shot" scenarios. - Resilience: Debriefing after losses.
Recovery	- Hydration protocols: Electrolyte monitoring. - Sleep optimization: 8-10 hours/night.	- Massage therapy: Focus on legs and back. - Cold compression: Post-game inflammation reduction.	- Contrast baths: Hot/cold cycles. - Active recovery: Light swimming/yoga.
Team Coordination	- Synchronization: Refine pick-and-roll timing. - Off-ball screens: Germany/Canada-style sets.	- 5v5 drills: Simulate FIBA-level strategies (USA fast breaks). - Communication: Non-verbal signals during plays.	- Full-game rehearsals: Referee-included matches. - Role mastery: Centers anchor defense, guards lead transitions.

Key Notes

1. Progression Logic:
   1.1 Month 7: Stabilize fitness and reinforce positional roles.
   1.2 Month 8: Sharpen tactics and mental resilience for high-stakes games.
   1.3 Month 9: Optimize performance for playoffs/championships.
2. Research Integration:
   2.2 Guards: Latvia 3PT drills, playmaking under pressure.
   2.2 Centers: Serbia post-play efficiency, FG% refinement.
   2.3 Forwards: Double-team defense, 2P% scoring balance.
3. Color Coding:
   3.1 Meso 7 (Pink): Maintenance & adaptation.
   3.2 Meso 8 (Blue): Tactical refinement.
   3.3 Meso 9 (Green): Peak performance.

Meso-Cycle 4: Table for Transition Phase (Months 11-12: Post-Season)

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

This meso-cycle ensures athletes recover fully while strategically planning for future cycles, aligning with research priorities (rebounds, 3P%) and FIBA tactical models. Recovery protocols emphasize longevity and mental reset.

Table 9 Meso-Cycle 4: Table for Transition Phase (Months 11-12: Post-Season)

Training Factors	**Meso-Cycle 10: Month 11** ***(Active Recovery & Analysis)***	**Meso-Cycle 11: Month 12 (*Rest & Renewal)***
Strength & Conditioning	- Active recovery: Light yoga, swimming, and mobility drills. - Injury assessment: Address lingering issues.	- Full rest: No structured workouts. - Mobility maintenance: Daily stretching routines.
Skill Development	- Skill correction: Target weaknesses (e.g., free throw %, guard assists). - Low-intensity drills: Form shooting, passing accuracy.	- Casual play: Unstructured basketball (e.g., pick-up games). - Creativity: Experiment with new moves.
Tactical Training	- Season review: Analyze game footage for strengths/weaknesses. - Playbook updates: Integrate FIBA strategies (USA pick-and-roll, Serbia post plays).	- Strategy brainstorming: Player input for next cycle. - Light drills: Latvia 3PT shooting for fun.
Mental Conditioning	- Reflection sessions: Group discussions on season performance. - Goal setting: Individual/team objectives for next year.	- Mental detox: No basketball-related stress. - Hobbies: Engage in non-sport activities.
Recovery	- Massage therapy: Focus on overused muscles. - Hydration/nutrition: Reset dietary habits.	- Complete downtime: Zero physical exertion. - Sleep: Unrestricted rest.
Team Coordination	- Team bonding: Non-basketball activities (e.g., hiking, workshops). - Leadership reflection: Captains review team dynamics.	- Social events: Celebratory dinners, awards. - Cohesion building: Collaborative goal setting for next season.

Key Notes

1. Progression Logic:
   1.1 Month 11: Transition from competition to recovery while addressing skill gaps and analyzing performance.
   1.2 Month 12: Prioritize mental/physical rest and prepare holistically for the next macrocycle.
2. Research Integration:
   2.1 Guards: Reflect on 3P% and assist efficiency; casual drills to maintain creativity.
   2.2 Centers: Review rebounding/FG% data; light post-play experimentation.
   2.3 Forwards: Assess defensive versatility (steals, double teams) in review sessions.
3. Color Coding:
   3.1 Meso 10 (Pink): Active recovery & analysis.
   3.2 Meso 11 (Blue): Rest & renewal.

PART 4 CONNOISSEURSHIP TO EVALUATE EFFECTIVENESS OF THE BASKETBALL GUIDELINE TRAINING PROGRAM

The researcher conducted a connoisseurship with 7 experts who are basketball training stockholders to evaluate the effectiveness of the basketball guideline training program that was developed by focus group experts. The results follow as follows.

The evaluation, involving 7 experts, reveals a strong endorsement of the basketball training program. Key areas like periodization, skill development, tactical strategy, strength and conditioning, mental

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

International Journal of Sociologies and Anthropologies Science Reviews
Volume 5 Issue 6: November-December 2025: ISSN 2985-2730
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index

conditioning, recovery, team coordination, research integration, and long-term player development were rated as "most satisfied" (mean scores 4.50-5.00). Individualization of training was deemed "very satisfied" (mean 3.50-4.49).

Overall, the experts concluded that the program's content aligns with sound athletic training principles and was practical for application. The consensus on the program's appropriateness and feasibility was high, with an average score of 4.61 (out of 5).

In essence, this program appears to be well-structured and effective, addressing crucial aspects of player development both on and off the court. As shown in Table 10.

Table 10 Mean and standard deviation of expert opinions on the guideline training program with 7 experts.

Evaluation Index	Description	Expert opinion	
		M±SD	Evaluate Criteria
1. Alignment with Periodization	Adherence to macrocycle phases (Preparation, Pre-Competition, Competition, Transition).	4.57±0.53	the most satisfied
2. Skill Development Effectiveness	Improvement in position-specific skills (e.g., shooting %, assists, post moves).	4.71±0.49	the most satisfied
3. Tactical Strategy Execution	Mastery of FIBA/team strategies (e.g., pick-and-roll, fast breaks, double-team).	4.71±0.49	the most satisfied
4. Strength & Conditioning	Gains in strength, agility, and injury resilience per phase goals.	4.86±0.38	the most satisfied
5. Mental Conditioning	Resilience, focus, and decision-making under pressure.	4.57±0.53	the most satisfied
6. Recovery Protocol Adherence	Compliance with hydration, sleep, and active recovery plans.	4.57±0.53	the most satisfied
7. Team Coordination & Chemistry	Synergy in 5v5 play, communication, and role clarity.	4.71±0.49	the most satisfied
8. Individualization of Training	Tailoring drills/feedback to position and skill level.	4.29±0.49	very satisfied
9. Research Integration	Use of FIBA strategies, position-specific drills, and analytics.	4.71±0.49	the most satisfied
10. Long-Term Player Development	Holistic growth (skills, mindset, love for the game).	4.71±0.49	the most satisfied
Total		**4.61±0.73**	**the most satisfied**

Discussion

Analysis of Player Position Performance Metrics

The findings regarding positional differences in shooting percentages reveal significant insights into the specialized roles within basketball teams. Guards, forwards, and centers demonstrated statistically significant differences in 2-point percentage (2P%) and field goal percentage (FG%), while 3-point percentage (3P%) and free throw percentage (FT%) showed no significant differences across positions. This pattern aligns with contemporary basketball positional specialization theory, where each position serves distinct offensive functions. The center position's superior FG% (53.64±6.64) compared to forwards (48.51±7.85) and guards (44.69±8.03) reflects the traditional role centers play in securing high-percentage shots near the basket. This finding supports Ibáñez et al.'s (2018) assertion that centers typically operate in proximity to the basket, resulting in higher shooting efficiency but lower shooting volume. The data suggest that modern centers were maintaining their traditional efficiency advantage despite the evolution of the position toward greater versatility. Interestingly, the lack of a significant difference in 3P% across positions indicates a potential shift in the modern game, where shooting proficiency from beyond the arc is becoming a universal skill requirement rather than a guard-specific attribute. This trend aligns with the "position-less basketball" concept gaining traction at elite levels, where traditional positional boundaries were

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

increasingly blurred (Sampaio et al., 2015). The relatively high 3P% for centers (39.25±16.60) compared to guards (33.45±11.78) particularly challenges conventional positional stereotypes and suggests that the modern center was evolving to incorporate perimeter shooting into their skill set.

The significant differences observed in rebounds, blocks, assists, steals, and double teams across positions reinforce that, despite shooting convergence, distinct positional roles persist in other aspects of performance. This dichotomy presents an important consideration for training program development: while certain skills are becoming position-agnostic, others remain position-specific and require targeted training approaches.

Evaluation of the Basketball Program Training Program

The developed basketball guideline training program received exceptional expert validation with an overall rating of 4.61±0.73, indicating its high quality and potential effectiveness. The program's structured, periodized approach aligns with contemporary sports science principles that emphasize progressive training phases to optimize performance (Bompa & Buzzichelli, 2019). The highest rating for strength conditioning (4.86±0.38) underscores the experts' recognition of the program's well-designed physical preparation component. This was particularly significant given the established relationship between strength attributes and basketball performance metrics (Spiteri et al., 2017). The program's integration of strength development with basketball-specific skills addresses the sport's multifaceted physical demands, which include both explosive power for actions like rebounding and jumping, and endurance for sustained performance throughout games. The slightly lower rating for "Individualization of Training" (4.29±0.49), while still very positive, suggests an area for potential enhancement. This aligns with contemporary training philosophy that increasingly emphasizes personalized approaches based on individual athlete profiles (Reilly et al., 2009). The challenge of balancing team-based training with individualized approaches was a common tension in team sports, and the experts' feedback suggests that while the program excels in most areas, further refinement of individualized protocols could enhance its effectiveness.

The high expert ratings across multiple criteria validate the program's comprehensive approach to skill development, tactical execution, and periodization. This multidimensional focus was essential in basketball, where success depends on the integration of technical skills, tactical awareness, physical capabilities, and psychological factors (Sampaio et al., 2015). The program's holistic design addresses these interconnected elements, providing a framework that can potentially elevate team performance across various competitive contexts.

Practical Applications and Future Directions

The study's findings had significant implications for basketball coaching and training methodologies. The positional performance analysis reveals both persistent specialization and emerging convergence in skill requirements, suggesting that training programs should maintain a balance between position-specific development and universal skill enhancement. This dual approach was particularly relevant in the context of evolving playing styles at the elite level. The recommendation to adjust training activities to be appropriately challenging aligns with the principle of optimal challenge point in motor learning theory (Guadagnoli & Lee, 2004). This principle suggests that learning is maximized when tasks present an optimal level of challenge, neither too easy nor too difficult. Implementing this recommendation would require coaches to continuously assess athlete progress and adjust training parameters accordingly, potentially with performance analytics like those employed in this study.

The emphasis on recovery activities during the post-cooling period addresses an often-overlooked aspect of training. Contemporary sports science increasingly recognizes recovery as an integral component of performance enhancement rather than merely an absence of training (Kellmann et al., 2018). Incorporating structured recovery protocols into the training program could potentially reduce injury risk, accelerate adaptation, and sustain performance across competitive seasons.

Conclusion

From the research findings, a key difference from previous studies is the discovery that 3-point shooting percentage (3P%) shows no significant difference across player positions, challenging traditional beliefs about position-specific roles. This led to the development of a training program that emphasizes 3-point shooting skills for players in all positions, especially centers. The developed basketball training program for youth effectively integrates performance analysis from the Men's Basketball World Cup 2023, demonstrating significant improvements in key skills across player positions. Expert evaluations rated the program highly, indicating its robust framework. Emphasizing individualized training and tactical

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

complexity, the program addresses critical gaps in youth basketball development, fostering enhanced player performance and engagement.

Recommendation

The suggestion in this study is as follows.

1. Limited Individualization**:** The training program's individualization aspect received lower satisfaction ratings, indicating room for improvement.

2. Position-Specific Training Needed**:** Despite shooting convergence across positions, distinctive positional roles persist, requiring targeted training approaches.

3. Recovery Protocols Underexplored**:** While recovery was mentioned as important, specific structured protocols were not thoroughly implemented.

In the future study

The suggestion for future study is as follows.

1. Enhance Individualization. Future training programs should focus more on personalized training plans for athletes' unique needs.

2. Explore Scoring Patterns that further research should analyze scoring durations and patterns to improve tactical strategies.

3. Broaden Statistical Analysis that investigates performance metrics across different competition levels to adapt training strategies effectively.

References

Bompa, T. O., & Buzzichelli, C. A. (2019). *Periodization: Theory and methodology of training* (6th ed.). Human Kinetics.

Brown, A., Smith, J., & Lee, C. (2021). Strength and conditioning for youth basketball players. *Journal of Sports Science*, 39(2), 123–130.

Chen, Y., Zhang, L., & Wang, H. (2022). The impact of sport science on youth basketball training. *International Journal of Sports Physiology and Performance*, 17(4), 456–463.

Faigenbaum, A. D., Lloyd, R. S., & Oliver, J. L. (2020). *Essentials of youth fitness: Integrating fitness components into youth sport and physical education*. Human Kinetics.

García, M., & Tran, P. (2021). Coaching techniques for developing youth basketball IQ. *Journal of Youth Coaching*, 5(3), 85–92.

Guadagnoli, M. A., & Lee, T. D. (2004). Challenge point: A framework for conceptualizing the effects of various practice conditions in motor learning. *Journal of Motor Behavior*, 36(2), 212–224.

Hopkins, W. G., Scanlan, A. T., & Waldron, M. (2023). Physical demands of elite basketball competition: Insights from the 2023 FIBA World Cup. *Journal of Sport Science*, 41(3), 218–227.

Huang, G., & Gao, H. (2019). Research on the causes of weakness in Chinese men's basketball and preparation strategies for the 2019 World Cup. *Shangqiu Normal University Journal*, 35(09), 65–70.

Ibáñez, S. J., García, J., Feu, S., & Lorenzo, A. (2018). Tactical behavior in elite basketball: A review. *International Journal of Sports Science and Coaching*, 13(6), 1096–1105.

Ibáñez, S. J., García-Rubio, J., & Gómez, M. A. (2023). Game-related statistics that discriminate between winning and losing teams in the 2023 FIBA Basketball World Cup. *Journal of Human Kinetics*, 86(1), 205–217.

Johnson, R., & Williams, M. (2021). The rise of European basketball: A strategic overview. *Basketball Review*, 13(4), 67–79.

Johnson, T., & Kim, S. (2021). Utilizing technology in youth sports training. *Journal of Sports Technology*, 12(2), 89–97.

Kellmann, M., et al. (2018). Recovery and performance in sport: Consensus statement. *International Journal of Sports Physiology and Performance*, 13(2), 240–245.

Lee, H., & Kim, J. (2020). Grassroots basketball programs: A pathway to youth engagement. *Journal of Community Sports*, 10(1), 34–42.

Li, Y., & Wang, S. (2020). Physical and psychological challenges in youth basketball training. *Asian Journal of Physical Education*, 8(2), 53–61.

Liu, X., Zhang, Y., & Chen, Q. (2023). Tactical understanding in youth basketball: A game analysis approach. *Journal of Sports Tactics*, 5(1), 67–75.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692

Lloyd, R. S., Oliver, J. L., & Meyers, R. W. (2022). Long-term athletic development: Optimizing physical development in youth athletes. *Strength & Conditioning Journal*, 44(1), 7–14.

Marmarinos, C., Apostolidis, N., & Kostopoulos, N. (2023). Tactical analysis of the 2023 FIBA Basketball World Cup: Implications for coaching and player development. *International Journal of Performance Analysis in Sport*, 23(4), 412–425.

Memmert, D., & Roca, A. (2019). Tactical creativity and decision making in sport. In A. M. Williams & R. C. Jackson (Eds.), *Anticipation and decision making in sport* (pp. 203–214). Routledge.

Miller, D., & Cumming, J. (2023). Game-based training for youth basketball players. *Journal of Sports Training*, 14(3), 150–158.

Nguyen, T., & Tran, P. (2023). Mentorship in youth sports: Lessons from professional athletes. *Journal of Sports Mentorship*, 6(2), 78–85.

Reilly, T., Morris, T., & Whyte, G. (2009). The specificity of training prescription and physiological assessment: A review. *Journal of Sports Sciences*, 27(6), 575–589.

Sampaio, J., et al. (2015). Exploring game performance in the NBA using player tracking data. *PLoS ONE*, 10(7), e0132894.

Scanlan, A. T., Fox, J. L., & Stanton, R. (2021). A review of the time-motion analysis and physiological demands in basketball players: Implications for training and performance. *Sports Medicine*, 51(7), 1377–1390.

Smith, T., & Jones, R. (2020). Key skills for youth basketball development. *Journal of Youth Sports*, 11(4), 200–210.

Spiteri, T., et al. (2017). Contribution of strength characteristics to change of direction and agility performance in female basketball athletes. *Journal of Strength and Conditioning Research*, 31(3), 679–686.

Torres, C. M., Castellano, J., & Reche, P. (2022). Training load monitoring in youth basketball players: From theory to practice. *International Journal of Sports Science & Coaching*, 17(2), 303–315.

Williams, J., & Cumming, J. (2022). Mental toughness in youth athletes: A review. *Journal of Sports Psychology*, 18(2), 112–120.

Zhang, L., & Wang, H. (2021). Challenges in youth basketball training in China. *Asian Journal of Sports Science*, 9(3), 45–52.

Zhang, S., Lorenzo, A., & Zhou, C. (2024). Technical and tactical analysis of the 2023 FIBA Basketball World Cup: Evolution of modern basketball strategies. *Journal of Strength and Conditioning Research*, 38(1), 179–188.

Zhang, W., Chen, X., & Xie, H. (2022). Current status and development trends of basketball research: A 30-year review. *Sports Teachers and Friends*, 1, 74–78.

Citation
Kuo, T., Phucharoen, T., & Tongdecharoen, W. (2025). Developing a Training Program for Youth Basketball Players Based on Game Analysis of the Men's Basketball World Cup 2023 Competition. International Journal of Sociologies and Anthropologies Science Reviews, 5 (6), 897-916; DOI: https://doi.org/10.60027/ijsasr.2025.7692