

Motor Learning–Based Basketball Talent Development Program for Beginners: Integrating Olympic Values for Cultural and Skill Formation

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Abstract

This study developed and evaluated a Motor Learning–Based Basketball Talent Development Program for Beginners integrating Olympic Values as a basis for cultural and skill formation. Specifically, it aimed to determine the level of basketball shooting skills among beginners before and after the implementation of the program, examine significant differences in shooting performance, assess the extent to which the program was manifested in terms of the cognitive, associative, and autonomous stages of Motor Learning Theory, determine the level of cultural education in terms of excellence, respect, and friendship, and identify implications for improving cultural education and skill development among beginner players.

The study employed a mixed-methods approach utilizing a one-group pretest–posttest design and qualitative inquiry. Participants consisted of beginner college students from Minnan University of Science and Technology, Quanzhou, Fujian Province, China. Data were gathered through a Basketball Shooting Skills Assessment based on the BEEF (Balance, Eyes, Elbow, and Follow-through) principle, a validated questionnaire measuring motor learning stages and Olympic values, and semi-structured interviews. Quantitative data were analyzed using mean, standard deviation, weighted mean, and paired-samples t-test, while qualitative data were analyzed through thematic analysis.

Results revealed that participants demonstrated substantial improvement in basketball shooting skills after the implementation of the program. Significant differences were found between pretest and posttest scores in all shooting skill components—Balance, Eyes, Elbows, and Follow-through—with all comparisons yielding statistically significant results ($p < .001$) and large effect sizes. The program was manifested to a high extent in terms of the cognitive stage (GWM = 4.01), associative stage (GWM = 4.19), and autonomous stage (GWM = 4.12), resulting in an overall weighted mean of 4.11. Likewise, participants reported a high level of cultural education in terms of excellence (GWM = 4.20), respect (GWM = 4.15), and friendship (GWM = 4.20), with an overall weighted mean of 4.18. Qualitative findings further indicated that the program enhanced confidence, teamwork, discipline, leadership, responsibility, cooperation, respect for others, and positive interpersonal relationships among participants.

The findings suggest that integrating Motor Learning Theory and Olympic Values Education provides an effective framework for developing both basketball competence and character formation

among beginner players. The study recommends the adoption of the proposed Motor Learning–Based Basketball Talent Development Program in educational institutions to strengthen sports instruction, cultural education, and holistic learner development.

Keywords: basketball talent development, motor learning theory, Olympic values education, shooting skills, cultural education, beginner basketball players, skill formation.

1. Introduction

Basketball has become one of the most widely practiced sports in China and plays a significant role in promoting youth participation in physical activity and sports development. In recent years, the Chinese government has strengthened the integration of sports and education as part of a national strategy for youth development. This initiative positions school-based sports, including basketball, as an important platform not only for improving physical fitness but also for cultivating discipline, teamwork, and social responsibility among students (Ministry of Education of the People's Republic of China, 2021; Li & Chen, 2023).

Furthermore, national policies such as the integration of sport and education and the *14th Five-Year Sports Development Plan* emphasize the importance of developing structured sport programs within educational institutions to enhance both athletic competence and holistic student development (General Administration of Sport of China, 2021; Wan et al., 2021). Despite the growing popularity of basketball and increasing participation in sports activities, challenges remain in ensuring that university-level basketball programs provide systematic training and meaningful learning outcomes.

Basketball talent development for beginners refers to a structured training process designed to develop fundamental basketball skills, knowledge of the game, and cooperative interaction among novice players. Unlike general physical activity programs, beginner basketball training focuses on gradual acquisition of skills acquisition through guided practice, structured drills, and progressive learning tasks. Foundational skills such as shooting serves as the basis of early basketball development and enable beginners to participate effectively in team play. Among these skills, passing is particularly important because it facilitates ball movement, supports tactical awareness, and encourages communication and coordination among players. However, many beginner training programs rely heavily on repetitive drills that are disconnected from real game situations, which may limit skill transfer and reduce the effectiveness of learning (Wulf & Lewthwaite, 2021).

To address this issue, the application of Motor Learning Theory, particularly the stages proposed by Fitts and Posner—cognitive, associative, and autonomous—provides a systematic framework for skill acquisition. This theory emphasizes that learners progress from understanding basic movements, to refining performance through practice, and eventually to performing skills automatically. Integrating motor learning principles into basketball training ensures that beginners develop not only technical proficiency but also the ability to apply skills effectively in game situations.

Beyond technical skill development, basketball also serves as a meaningful context for cultural and value formation. As a team sport, it inherently promotes cooperation, communication, discipline, and respect for rules. These qualities align with the philosophy of Olympism, which highlights the

integration of sport, education, and culture fostering holistic human development (Rathnayaka, 2026). Through the Olympic Values Education framework, core values such as excellence, respect, and friendship can be intentionally embedded in sports programs (Forto, 2025). When learners are encouraged to strive for improvement (excellence), demonstrate fairness and discipline (respect), and build positive relationships (friendship), basketball training becomes a platform for both skill development and character formation (Durden-Myers, 2020).

Moreover, existing studies on beginner basketball training tend to focus primarily on technical skill development without explicitly linking these skills to observable cultural values such as excellence, respect, and friendship. There is also a lack of systematic evaluation of both skill progression and value formation in training programs. This gap highlights the need for an integrated approach that combines motor learning principles with Olympic Values Education to ensure both technical and cultural development among beginner players (Yang et al., 2021; Almeida et al., 2023).

This indicates a significant gap in the literature and practice, particularly in the absence of an integrated training model that simultaneously develops motor skills and cultural values among beginner basketball players.

Given these conditions, there is a need to design and evaluate a systematic beginner basketball talent cultivation program that integrates technical skills development with cultural education. Such a program should be grounded in motor learning principles, incorporate cooperative learning practices, and include measurable indicators for both skill performance and social behaviors. Addressing this gap is essential to strengthen beginner basketball training programs and support the broader educational objectives of sports participation in universities.

Therefore, this study aims to develop a Motor Learning–Based Basketball Talent Development Program for Beginners that integrates Olympic values as a basis for cultural and skill formation. By combining systematic skill progression with value-oriented training, the study seeks to provide a comprehensive framework that enhances both basketball competence and the development of excellence, respect, and friendship among beginner players.

2. Research Questions

This study aims to examine basketball talent cultivation for beginners as a basis for cultural education and skills development. Specifically, it seeks to answer the following questions:

1. What is the level of basketball shooting skills among beginners before and after the implementation of the basketball talent cultivation program, specifically evaluated in terms of Balance, Eyes, Elbow, and Follow-through?
2. Is there a significant difference in the basketball fundamental skills of beginners before and after the implementation of the basketball talent cultivation program?
3. To what extent is the basketball talent cultivation program manifested in terms of the dimensions of the Motor Learning, namely:
 - 3.1 cognitive
 - 3.2 associative stage
 - 3.3 autonomous stage.

4. What is the level of cultural education among beginners in terms of Olympic values, specifically:
 - 4.1 excellence
 - 4.2 respect and
 - 4.3 friendship.

5. How may the basketball talent cultivation program implemented in this study serve as a basis for improving cultural education and skills development among beginners?

3. Theoretical Framework

This study was anchored on two complementary theoretical perspectives that explain how beginners develop basketball skills while simultaneously acquiring cultural and ethical values in sports: the Motor Learning Theory of Paul Fitts and Michael Posner (1967) and the Olympic Values Education Theory rooted in the philosophy of Pierre de Coubertin and promoted through the International Olympic Committee's Olympic Values Education Program (OVEP).

These theories provide the conceptual basis for understanding how basketball talent cultivation among beginners can simultaneously develop motor skills and cultural education values.

The Motor Learning Theory developed by Fitts and Posner explains how individuals acquire and refine motor skills through progressive stages of learning. This theory is widely applied in sports training, particularly in teaching beginners' fundamental techniques.

4. Project Development

The Basketball Talent Cultivation Program for Beginners, a six-week structured training intervention developed by the research to enhance both fundamental basketball skills and cultural education values among beginner players. The development of the program is grounded in the will be based on the identified need to improve essential basketball skills such as shooting while simultaneously promoting key values in sports participation, including teamwork, discipline, cooperation, respect for rules, and sportsmanship.

The program was developed following a systematic process consisting of four phases: planning, design, implementation, and evaluation.

During the planning phase, the researcher conducted a review of relevant literature on motor learning principles, basketball training methods, and value-based sports education. This phase aimed to identify appropriate drills, instructional strategies, and learning activities suitable for beginner players. The program was conceptualized to follow a progressive structure, allowing participants to acquire basic skills before advancing to more complex and game-related applications.

In the design phase, the program was organized into six weekly sessions, each with specific objectives aligned with both skill development and cultural education.

5. Methodology

This chapter describes the methodology used in the study, including the research design, participants, instruments, procedures, and statistical analyses. It explains how the basketball talent

cultivation program was evaluated in terms of shooting skills, motor learning stages, and Olympic values, ensuring that the findings are valid, reliable, and aligned with the research objectives.

6. Summary of Findings

The study investigated the effectiveness of the Motor Learning–Based Basketball Talent Development Program for Beginners, focusing on shooting skills, motor learning stages, and Olympic values. The following summarizes the findings for each research question,

7. Conclusions

Based on the findings of the study, the following conclusions are drawn:

1. **Basketball Shooting Skills.** The Motor Learning–Based Basketball Talent Development Program significantly improved the shooting skills of beginners when evaluated through the BEEF principle. Learners demonstrated notable gains in Balance, Eyes, Elbow, and Follow-through, with the greatest improvements observed in gaze focus and follow-through mechanics. This confirms that structured, principle-based training is effective in strengthening shooting fundamentals.
2. **Significant Differences in Shooting Skills.** Statistical analysis revealed that the program produced significant differences between pretest and posttest scores, with large effect sizes across all components. This indicates that the intervention was not only effective but also had a substantial impact on the shooting performance of beginners, validating the program's instructional design.
3. **Motor Learning Stages.** The program was manifested to a high extent across the cognitive, associative, and autonomous stages of motor learning. Learners progressed from understanding basic skills, to refining performance with fewer errors, and ultimately toward automatic execution in game-like situations. This confirms that the program successfully guided participants through the stages of skill acquisition as theorized by Fitts and Posner.
4. **Cultural Education in Olympic Values.** The program effectively instilled the Olympic values of Excellence, Respect, and Friendship among beginners. Learners demonstrated persistence, discipline, fairness, cooperation, and camaraderie, showing that basketball training can serve as a platform for both technical and cultural education.
5. **Program as Basis for Cultural Education and Skills Development.** By integrating motor learning principles with Olympic values, the program provided a dual focus on skill formation and character development. Structured drills, corrective feedback, and reflective activities ensured that learners improved technically while also internalizing values essential for teamwork and sportsmanship. This highlights the program's potential as a model for holistic sports education.
6. **Basketball Program that Fosters Olympic Values.** The study concludes that the Motor Learning–Based Basketball Talent Development Program for Beginners is the basketball program that fosters the integration of Olympic values. Its features—accuracy challenges (Excellence), rule-based drills and fair play scrimmages (Respect), and partner shooting and cooperative team activities (Friendship)—ensured that learners developed both technical proficiency and cultural values. This makes the program a comprehensive approach to beginner basketball training.

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