

A Descriptive-Comparative Study on the Skill Acquisition of Basketball Athletes

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Abstract

Skill acquisition is the process through which individuals learn and develop new abilities or enhance existing ones through practice, instruction, and experience. This study aimed to describe the level of skill acquisition among basketball athletes in the Davao Region for the school year 2024–2025. A non-experimental quantitative research design was employed, specifically utilizing a descriptive-comparative approach with complete enumeration of 50 basketball athletes. Results showed an overall mean of 4.31 (SD = 0.74), interpreted as Very High, indicating that skill acquisition among the athletes is always observed across various basketball fundamentals. Furthermore, the study found no significant differences in skill acquisition when analyzed according to demographic profiles, suggesting that these factors do not influence the level of skill acquisition. This study accepted the assertion of Fitts and Posner's Three Stage Model that athletes develop their abilities through structured learning, deliberate practice, and continuous refinement of motor skills. The findings may serve as a basis for developing evidence-based training programs aimed at enhancing basketball skill acquisition through structured and purposeful practice.

Keywords: Skill Acquisition; Skill Development; Motivation; Social Skills

Introduction

Skill acquisition in basketball is the process of learning and refining motor or cognitive skills through practice, experience, and feedback, leading to improved performance and efficiency (Schmidt & Lee, 2019). Athletes engage in this process by forming movement patterns, improving decision-making abilities, and adjusting their skills to various competitive environments, demonstrating increased expertise and automaticity (Williams & Hodges, 2018). However, there is a concerning decline in skill acquisition over time, particularly when athletes encounter periods of no improvement during adolescence (Guimarães et al., 2021).

In China, study by Zhang et al. (2020) found a declining focus on the dynamic nature of skill acquisition and emphasized that the talent development system for elite basketball athletes lacks individualized skill development. Similarly, in Australia, basketball skill acquisition is challenged by inadequate infrastructure, including a shortage of courts and limited access to training facilities. (Herald Sun, 2023).

In the Philippines, skill acquisition among basketball athletes is hindered by challenges such as physical constraints, health issues, in-game pressure, and communication problems (Medina et al., 2024).

Similarly, Sarra et al. (2025) in Maasin City identified challenges encountered by basketball athletes in acquiring skills such as inadequate sports facilities, limited funding, and the need for capacity building among sports officers.

Despite the importance of skill acquisition in basketball for athlete development, there is a significant gap in understanding how various factors, such as physical constraints, health issues, and inadequate facilities, affect skill development over time, particularly in regions with limited resources. Studies like Medina et al. (2024) and Sarra et al. (2025) highlight these challenges, but they fail to explore how these factors interact and evolve during critical developmental stages. Thus, this research lies in the need to equip basketball athletes with skill development, motivation, and social skills required to overcome the barriers to effective skill acquisition and ensure their long-term success in the sport (William & Hodges, 2018; Guimarães et al., 2021). Without immediate intervention, the gap in skill acquisition could hinder athlete performance and limit their potential. As a result, this study seeks to address this gap.

Statement of the Problem

The purpose of the study was to determine the relationship between competence and commitment towards music teaching readiness of Junior High School MAPEH teachers of Davao Region for the school year 2024- 2025. It specifically answers the following objectives:

1. Describe the profile of respondents in terms of:
 - 1.1 Age
 - 1.2 Grade level; and
 - 1.3 Sex
2. Determine the level of skill acquisition in terms of:
 - 2.1 Skill Development
 - 2.2 Motivation and
 - 2.3 Social Skills
3. To determine if there is a significant difference in the level of skill acquisition when analyzed across the profile of the respondents.
4. To propose an intervention based on the results of the study.

Theoretical Framework

This study is anchored on the theory of Fitts and Posner's Three-Stage Model by Fitts and Posner (1967), which seeks to explain the process of skill acquisition through three distinct stages: Cognitive, Associative, and Autonomous. These stages illustrate how an individual progresses from understanding and performing basic motor tasks with conscious effort to executing skills automatically with minimal cognitive load.

Conceptual Framework

Fitts and Posner's Three-Stage Model explains that when athletes are learning a new skill, they go through distinct stages of progression. In the context of skill acquisition in basketball, athletes experience a shift from basic understanding to automatic execution of skills, such as dribbling, shooting, and passing. This progression is essential for mastering complex motor skills, such as those required in sports like basketball.

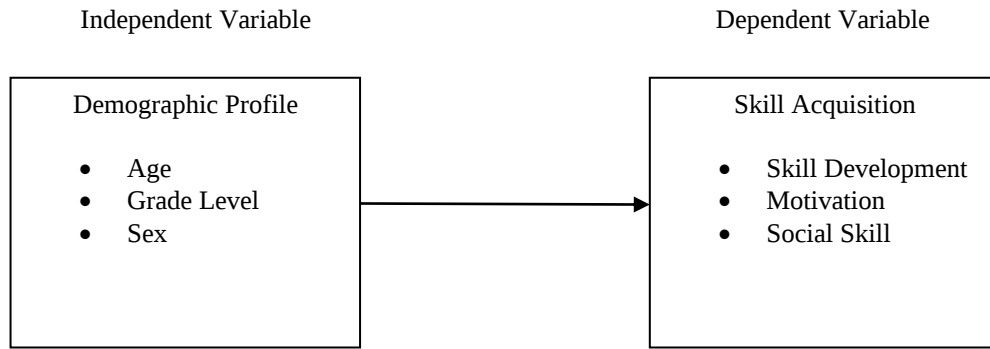


Figure 1. Level of Skill Acquisition of Basketball Athletes

Method

A non-experimental quantitative research design was used in this study. Creswell (2017) defined quantitative research design as collecting and analyzing numerical data; it systematically investigates phenomena by gathering quantifiable data and performing statistical, mathematical, and computational techniques. The results are depicted in numerical form. Specifically, in this study, the researcher will use the Descriptive-Comparative type of research to determine the significant difference between the level of skills acquisition when analyzed across the profile of the respondents. Descriptive comparative research is a quantitative research design that aims to describe the differences between groups in a population without manipulating the independent variable (Cantrell, 2011).

This study will be conducted among the basketball athletes in Davao Region. It is a region of the Philippines located in the Southern part of Mindanao. Davao Region will be chosen as the study's focus with its reputation as an inclusive and supportive environment for athlete development. Only basketball athletes who had signed the informed consent form were all required to participate while excluded from the target participants were athletes who specialized in other sports outside basketball. The selection of the respondents entailed the use of complete enumeration, involving all 50 basketball athletes from a selected school in the Davao Region for the school year 2024–2025. This technique allows the researcher to gather data from the entire population of interest, ensuring comprehensive coverage.

The questionnaire used in this study was adapted from the work of Panganiban and San Miguel (2023), which assessed skill acquisition in basketball through observational learning. The following was used by the respondents in the questionnaire to assess the basketball athlete's skill acquisition: 5 as strongly agree, 4 as agree, 3 as neutral, 2 as disagree, and 1 as strongly disagree.

Results and Discussion

This chapter outlines the discussion of the results and the analysis of the data. By employing suitable statistical methods, the gathered information was examined to address the issues outlined in the introduction of this study. The discussion is organized according to the order of the research objectives. Related literature is integrated to support and provide context for the findings.

Table 1. Summary of the Demographic Profile of the Basketball Athletes for Age, Sex, and Grade Level Frequency

Category	Frequency	Percent (%)
Age		
13	6	12.0
14	9	18.0
15	9	18.0
16	8	16.0
17	9	18.0
18	9	18.0
Total	50	100.0
Sex		
Male	33	66.0
Female	17	34.0
Total	50	100.0
Grade Level		
Grade 7	6	12.0
Grade 8	9	18.0
Grade 9	5	10.0
Grade 10	8	16.0
Grade 11	7	14.0
Grade 12	15	30.0
Total	50	100.0

The table highlights the demographic characteristics of the Basketball Athletes in Davao Region, categorized by age, sex, and year level. The majority of respondents belong to the 14,15,17 and 18-year-old age group, representing eighteen percent, followed by sixteen years old at sixteen percent and thirteen years old at twelve percent, with smaller proportions for other age groups. The sex distribution is not evenly split, with sixty-six percent male and thirty-four percent female respondents. Regarding grade level, the majority of respondents are grade twelve students, comprising thirty percent, followed by the grade eight students comprising eighteen percent, followed by grade ten with sixteen percent, while the remaining twelve percent are from grade seven and the ten percent are grade nine athletes indicating a stronger representation of those further along in their sports.

Table 2. Summary of the Level of Skill Acquisition of Basketball Athletes

Skill Acquisition	SD	Mean	Interpretation
Skill Development	.72	4.16	Very High
Motivation	.72	4.31	Very High
Social Skill	.99	4.44	Very High
Overall	.74	4.31	Very High

Presented in table 2 are the descriptive statistics for the skill acquisition of Basketball Athletes, measured across three dimensions: skill development, motivation, and social skills, as well as the overall mean.

The overall skill acquisition has a standard deviation of .74 and a mean of 4.31, which is interpreted as Very High, which means that the skill acquisition of basketball athletes is always observed. This suggests that the athletes consistently demonstrate a high level of skill acquisition across various basketball fundamentals.

The result of this study supports the findings of Ericsson (2015), who indicated that individuals with very high skill acquisition tend to engage in extensive deliberate practice, leading to superior performance across various domains. Athletes who engage in deliberate practice not only enhance their technical abilities but also improve their decision-making, adaptability, and overall game performance. Similarly, the study by Guimarães et al. (2021) indicates that consistently observed skill acquisition in young basketball players is associated with better growth-motor performance profiles and higher selection rates for regional teams.

In this variable, the indicator social skills revealed a standard deviation of .99 and achieved the highest mean score of 4.44, categorized as Very High, which means that the skill acquisition of basketball athletes is always observed. This indicates that basketball athletes consistently demonstrate well-developed social skills, which play a crucial role in teamwork, communication, and overall game performance.

In the study by Deol and Singh (2015), it is stated that social intelligence and social support are crucial factors contributing to the success of basketball players, as these elements enhance teamwork, communication, and the ability to adapt to dynamic game situations. In the same way, the respondents' high social skills not only facilitate effective collaboration and cohesion within their team but also contribute to their overall well-being.

Further, motivation revealed a standard deviation of .72 with a total mean score of 4.31, is interpreted as Very High, which means that the skill acquisition of basketball athletes is always observed. This highlights that motivated athletes are more likely to engage in deliberate practice, set performance goals, and remain resilient in the face of challenges.

Similarly, a study by Arunfred et al. (2024) found that personal motivation positively influences skill acquisition. These findings indicate that basketball athletes with high level of personal motivation, when supported by well-structured and carefully designed training programs, are more likely to achieve effective skill development.

Also, skill development revealed a standard deviation of .72, registered the lowest mean score at 4.16, also interpreted as Very High, which means that the skill acquisition of basketball athletes is always observed as well. This implies that basketball athletes consistently demonstrate a high level of skill development, although it is slightly lower compared to other indicators. This suggests that while basketball athletes are continuously acquiring and refining their skills, there may still be areas for improvement or factors influencing the pace of their development.

Finally, a study by Sarama (2023) highlighted the importance of structured skill development programs in youth basketball. The research emphasizes that using variable, game-based drills instead of repetitive exercises enhances adaptability and decision-making, while an athlete-centered approach tailored to individual learning styles fosters better skill retention, athletic development, and a lasting passion for the game. This implies that the respondents benefit from dynamic and personalized training methods, enabling them to develop not only technical proficiency but also critical thinking and adaptability in real-game situations, leading to more effective skill acquisition. Similarly, statement such as "I can discover and develop new basketball skills through practice" reinforce the idea that basketball athletes recognize the value of continuous learning and deliberate practice in their skill development. Suggesting that they actively engage in training methods that challenge their abilities, encourage adaptability, and promote long-term improvement,

ultimately enhancing their overall performance and confidence on the court.

Table 3. Summary of the Difference in the Level of Skills Acquisition of Basketball Athletes when Analysed According to Demographic Profile.

Demographic Profile	Skill Acquisition of Basketball Athletes			
	F-value	P-value	Decision @ 0.05 Alpha Level	Interpretation
Age	1.09	0.40	Accept null hypothesis	There is no significant difference.
Sex	-1.32	0.19	Accept null hypothesis	There is no significant difference.
Grade Level	0.44	0.81	Accept null hypothesis	There is no significant difference.

Presented in Table 3 are the results of the skill acquisition of Basketball Athletes. The ANOVA was used to assess differences in skill acquisition based on age and grade levels. While the T-test was applied to examine differences between sexes.

The analysis revealed that the p-value for age is 0.40, which is greater than the significance level of 0.05 accepting the null hypothesis. This result indicates that age does not have a significant difference on the skill acquisition of the respondents. Regardless of whether the participants are younger or older, their responses to the variables examined in the study appear consistent, suggesting that age is not a determining factor in shaping these outcomes.

In terms of sex, the result revealed a p-value 0.19, which also exceeds the threshold of 0.05 thus accept the null hypothesis. This implies that there is no significant difference in skill acquisition between male and female respondents. The findings suggest that gender does not play a significant role in affecting the differences in how participants perceive process of skill acquisition in basketball, indicating a uniformity in responses across sexes.

The p-value for grade level is 0.81, which similarly surpasses the 0.05 significance level thus accept the null hypothesis. This result demonstrates that the grade level of the respondents, whether they are in junior high school like grades seven, eight, nine, ten or senior high school like grades eleven and twelve, have no statistical difference on their skill acquisition. It reflects that the skill progression of the respondents does not contribute to notable variations in the skills being evaluated.

The result aligns with Gromeier et al. (2019), who examined age and gender-related differences in performances among novices. They found that, although there were some differences favoring males in certain movement characteristics, these differences diminished with age. The study concluded that both male and female athletes demonstrated similar movement patterns in the main function phase as they aged, suggesting that consistent engagement in structured training programs helps both male and female athletes achieve comparable levels of skill acquisition over time.

Additionally, Guo (2020) highlighted that self-regulated learning (SRL) strategies tend to decline as students progress through grade levels. This suggests that differences in skill acquisition are not necessarily

linked to grade level but rather to individual motivation and the ability to self-regulate learning in sports contexts. This indicates that basketball athletes who engage in deliberate practice and self-directed learning may develop their skills at similar rates, regardless of their grade level. Thus, factors beyond grade level, such as training intensity, personal commitment, and self-regulation, may have a more significant influence on skill acquisition.

To Propose an Intervention Based on the Results of the Study

Based on the study's results, which indicate consistently very high skill acquisition but areas for further enhancement in skill development, this intervention program is proposed to reinforce and refine these skills among basketball athletes. The Basketball Skill Enhancement and Development Program (BSEDP) aims to support the skill acquisition of basketball athletes through structured, evidence-based training. The program integrates game-based drills, fundamental skills mastery, and personalized coaching to enhance adaptability, decision-making, and technical proficiency. Strength and conditioning exercises, along with injury prevention strategies, ensure physical readiness, while mental resilience workshops promote motivation, confidence, and teamwork. To foster inclusivity, the program implements mixed-gender training sessions and equal development opportunities for male and female players. Through a 12-week phased approach, athletes will engage in skill assessments, targeted development, and competitive simulations, ultimately improving their overall performance, fostering long-term growth, and reinforcing gender-neutral skill acquisition in basketball.

Conclusion

Based on the findings that there is no significant difference in skill acquisition when analyzed according to profile, it is inferred that these demographic factors do not affect the level of skill acquisition. Further, based on the conclusion, this study accepted the assertion of Fitts and Posner's Three Stage Model. Correspondingly, the concurrence of the theory that skill acquisition progresses through distinct stages from cognitive understanding to autonomous execution, that athletes develop their abilities through structured learning, deliberate practice, and continuous refinement of motor skills is accepted and proved

Recommendation

The findings of this study may contribute to the enhancement of physical education and sports training by providing insights into the process of skill acquisition, encouraging educators and coaches to design training programs that focus on repeated, purposeful practice and gradual skill enhancement. This ensures that basketball athletes develop fundamental skills through structured training sessions.

In addition, future research may explore additional factors that may impact skill acquisition such as cognitive abilities, learning styles, coaching methodologies, and the effectiveness of various training interventions. Replicability of this study is also encouraged using the same factors but conducted in a different locale or among different sports disciplines to validate the consistency of findings. Such replication and expansion of variables are intended to either strengthen or challenge the claims derived from this study.

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