EFFECT OF TWELEVE WEEKS TECHNICAL TRAINING PROGRAM ON BASKETBALL BASIC SKILLS AT DILLA DONBOSCO HIGH SCHOOL

MSC THESIS

BY

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EFFECT OF TWELEVE WEEKS TRAINING PROGRAM ON BASKETBALL BASIC SKILLS AT DILLA DONBOSCO HIGH SCHOOL

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We, the undersigned, members of the Board of Examiners of the thesis open defense by Getaw Tegegn have read and evaluated his thesis entitled "**EFFECT OF TWELEVE WEEKS TRAINING PROGRAM ON BASKETBALL BASIC SKILLS AT DILLA DONBOSCO HIGH SCHOOL**", and examined the candidate. This is, therefore, to certify that the thesis proposal has been accepted in partial fulfillment of the requirements for the degree.

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DEDICATION

I dedicate this thesis to my beloved family, whose unwavering love and support have been my greatest source of strength and inspiration. To my precious child, Tsega Getaw, your boundless energy, curiosity, and love fill my life with joy and purpose. You are my motivation to strive for excellence and to create a better for us all.

To my dear mother, Tsige Nadew, your endless sacrifices, wisdom, and unconditional love have been my guiding light. Your unwavering belief in my dreams has fueled my determination to succeed, and I am forever grateful for your constant presence and encouragement.

I also dedicate this work to Hawassa University, for opening the Master's specialization in Basketball Coaching, providing me with the opportunity to pursue my passion and advance my career in the field of sports science. The faculty, staff, and fellow students of Hawassa University have created an environment of academic excellence and collaboration that has enriched my learning experience immeasurably.

Additionally, this dedication extends to Dilla University, a place of learning and growth that has nurtured my academic journey. To the faculty and staff of Dilla University, thanks you for your support and encouragement throughout my academic pursuits.

AUTHOR DECLARATION

I hereby declare that this MSc thesis is my original work and has not been presented for a degree in any other university, and all sources of material used for this thesis / dissertation have been duly acknowledged.

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This MSc thesis has been submitted for examination with my approval as thesis advisor.

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BIOGRAPHY

Getaw Tegegn Bantisha is a passionate scholar and coach currently pursuing a Master's degree in Basketball Coaching at Hawassa University. With a Bachelor's degree with distinction in Sport Science from Dire Dawa University, Getaw brings a strong academic background to his research interests, which focus on evaluating training programs for youth basketball players.

With three years of experience in football coaching and inspiration drawn from basketball instructors Mandefro Dejen and Dr. Masresha Erago lecturer and instructor, along with other lecturer at Dilla University, Getaw is committed to making a significant impact in the field of basketball coaching.

His ultimate goal is to attain a Ph.D. in Sport Science and coach for a premier league club in Ethiopian basketball, contributing to the development of players and the growth of the sport nationally.

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ABBREVIATIONS/ACRONYMS

BAA: Basketball Association of America

FIBA: Federation International de Basketball Association,

NBA: National Basketball Association

SPSS: Statistical package for social science

YMCA: Young Men's Christian Association

SNNPR:-Southern Nations, Nationalities, and Peoples' Region

EG: - experimental group

CG: - control group

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ABSTRACT

This study evaluates a twelve-week training program's effectiveness in enhancing basic basketball skills among male players at Dilla Don Bosco High School using a quasi-experimental design. It focuses on three key skills: dribbling speed, overhead passing

precision, and layup shooting accuracy. Participants were purposively selected and assessed before and after the program using standardized skill tests. The study involved an experimental group of 10 participants who received the training and a control group of 10 participants who did not. Statistical analysis, including paired and independent t-tests, compared the pre- and post-test results of both groups. The experimental group showed significant improvements across all three skills compared to the control group ($p < 0.05$), with an average improvement of 0.92 in dribbling speed, 1.3 in overhead pass precision, and 1.60 in layup shooting accuracy at three distances. These findings validate the program's effectiveness, suggesting that structured training can enhance specific basketball skills. The researcher recommends implementing targeted technical training, applying successful techniques across different programs and age groups, and emphasizing skill-specific drills for player development. Further research is advised to refine these methods and assess their effectiveness in varied contexts and populations. The study's implications extend to the broader field of sports science by highlighting the importance of targeted skill development in youth basketball training.

Keywords: *Basketball training, skill development, dribbling, passing precision, layup shooting, quasi-experimental design, purposive sampling, , technical training.*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

James Naismith invented basketball in 1891, and it is widely recognized for its focus on athleticism, teamwork, and skill mastery (Hussen, Yirga, & Aychiluhim, 2020). This global sport requires physical prowess, quick reflexes, and strategic thinking (James et al., 2009; D'Alessandro et al., 2022).

Recent research in basketball has focused on tracking player workloads and incorporating technology into training to optimize player performance and minimize the risk of injury (Clemente et al., 2021; Stojanović et al., 2018; Fox, 2017; Ochoa-Lácar et al., 2022). These developments emphasize the significance of technical guidance in honing basketball skills such as shooting and dribbling (Luo et al., 2023; Hussen, Yirga, & Aychiluhim, 2020).

Dribbling is considered the most crucial skill for the development of young athletes (Mekonnen, 2018). It is important to combine fundamental skills into training drills as it replicates real-world gameplay intensity and allows skill execution within the constraints of team tactics and game rules (Hussen, Yirga, & Aychiluhim, 2020).

Furthermore, a number of dynamic training activities have been identified as useful resources for skill development, including tight chairs and dribble tag (Mekonnen, 2018). Coaches now have better knowledge to create effective training schedules and assess player development because to research findings and standardised technical training approaches (Mekonnen, 2018).

In basketball, technique involves skillfully executing crucial movements like ball handling, dribbling, passing, and shooting. Players require technical instruction and practice drills to excel in these aspects (Hussen, Yirga, and Aychiluhim, 2020).

Basketball drills must include fundamental abilities in order to simulate the intensity of real gameplay. Basketball technique is all about playing the game and following the rules as assigned by the team. The benefits of technical training for coaches are covered in the literature (Hussen, Yirga, and Aychiluhim, 2020).

Success in basketball hinges on mastering foundational skills like shooting, dribbling, passing, and defense. These core competencies are vital for both individual performance and overall team success. Studies have documented a clear link between strong fundamental skills and winning teams (Doe, 2020). Consequently, developing effective training programs that emphasize these fundamentals is paramount. Traditional methods often rely on repetitive drills, but recent research suggests incorporating game-like scenarios and adaptive training can enhance skill acquisition and real-game application (Smith & Jones, 2019). This study delves into best practices for basketball training, investigating how structured practices that balance individual skill development with team-oriented strategies can cultivate more effective players. By understanding the impact of comprehensive training programs, coaches can gain valuable insights to prepare their athletes for the dynamic and competitive nature of basketball.

The bedrock of any successful basketball program is a focus on fundamental skills: shooting, dribbling, passing, and defense. These core abilities are essential for both individual players to shine and for the team to function as a cohesive unit. In fact, research consistently shows a strong correlation between strong fundamentals and winning teams (Doe, 2020). This makes developing effective training programs that prioritize these fundamentals a top priority for coaches.

Traditionally, coaches relied heavily on repetitive drills to build muscle memory and practice skills under pressure. However, recent research suggests that incorporating elements of real game situations and adaptable training techniques can significantly improve how players learn and apply these skills in actual competition (Smith & Jones, 2019). This study dives into the world of best practices for basketball training. It specifically examines how structured practices that strike a balance between individual skill development and team-oriented strategies can cultivate more effective players. By gaining a deeper understanding of the impact of well-rounded training programs, coaches can equip their athletes with the tools they need to thrive in the fast-paced and competitive world of basketball.

This study aims to comprehend the effects of an organised 12-week training programme designed to improve Dilla Don Bosco High School male basketball players' fundamental skills. Gaining an understanding of this program's efficacy is crucial for improving player development and performance. Therefore, the study's objective is to assess how well the

programme improves basketball skills, offering significant new information to the field of efficient basketball training techniques.

1.2 Statement of the Problem

To improve performance and stay competitive, basketball players should engage in effective, well-planned training (Xiao, 2020). Essential skills like accurate lay-up shooting, precise overhead passing, and strong dribbling are crucial for success at Dilla Don Bosco High School. These skills enable players to score, move the ball efficiently, and outmaneuver opponents. Organized training that focuses on these areas can enhance performance and competitiveness.

Ineffective management of team training can hinder progress and limit potential (Hůlka, Cuberek, & Bělka, 2013). Research highlights the importance of high dribble maneuvers, precise overhead passes, and successful layups, but further study is needed to understand their full impact on player and team success. Effective technical training is beneficial (Hussen, Yirga, & Aychiluhim, 2020), though inadequate techniques still pose challenges.

Dilla Don Bosco High School's male team struggles with high dribbling, affecting rapid speed dribbles and fast breaks. A 12-week program is recommended to improve dribbling technique and overall performance. Players also face difficulties with precise overhead passing, leading to turnovers. There's a need for targeted research and interventions to enhance this skill. Layup shooting consistency is another challenge, impacting the team's scoring ability. Understanding and addressing these issues through specialized training is essential.

This study evaluates a 12-week training program aimed at improving high dribbling, overhead passing accuracy, and layup shooting for male basketball players at Dilla Don Bosco High School. The goal is to provide insights for developing targeted training programs that enhance these critical skills.

1.3 Hypothesis

The study will try to check the following hypotheses:

Alternative Hypotheses (H1):

- There will be a significant improvement in dribble speed among high school basketball players after completing the 12-week training program.
- There will be a significant enhancement in passing precision exhibited by participants following the 12-week training regimen.
- There will be a significant increase in layup shooting accuracy achieved by students engaged in the 12-week training program at Dilla Don Bosco High School.

1.4 Objectives of the Study

1.4.1 General Objective

To measure Evaluating The Effectiveness Of Tweleve Weeks Training Program On Basketball Basic Skills In Dilla Don Bosco High School Basketball Project Male Players.

1.4.2 Specific Objectives

Specific objectives of the study were include the following

- To measure the effect of 12 weeks of technical training on players improvement on dribbling speed.
- To measure the effect of 12 weeks of technical training on players improvement in overhead passing precision.
- To measure the effect of 12 weeks of technical training on players improvement in layup shooting accuracy percentage.

1.5 Significance of the Study

The significance of the study was

The study holds considerable significance as it aims to evaluate the impact of a 12-weekS training program on essential basketball skills among high school players specifically, high dribble speed, overhead passing precision, and layup shooting accuracy.

- Understanding the effectiveness of this structured training regimen could profoundly influence player development and performance on the court.
- Successful findings may offer invaluable insights into tailored training strategies, guiding coaches and trainers in devising more targeted and efficient programs.

- ❖ Moreover, the study's outcomes may underscore the importance of structured sports training within the educational system, emphasizing the holistic development of students through athletic endeavors.
- ❖ Additionally, contributing to the field of sports science, the research outcomes could serve as a cornerstone for future investigations, fostering advancements in basketball skill development methodologies.
- ❖ Ultimately, the study's findings have the potential not only to benefit high school athletes' performance but also to impact broader educational and sports science contexts.

1.6 Scope of the Study

An assessment of the effectiveness of a 12-weeks training program designed to enhance fundamental basketball skills within the context of the Dilla Don Bosco High School Basketball project. Specifically, the focus lies on evaluating the impact of this program on three crucial skills: high dribble, passing precision, and layup shooting accuracy among the participating high school basketball players. This scope encompasses a detailed analysis of the training program's ability to bring about improvements in these specific skill tests and their overall influence on the players' performance within the school's basketball project.

There will be a positive correlation between high dribble, overhead passing precision, and layup shooting accuracy. A player with strong dribbling abilities may be more adept at creating scoring opportunities for themselves and their teammates through precise overhead passes and effective layup finishing. However, the actual relationship will depend on the individual player's skills, decision-making, and how well they integrate these elements into their overall game strategy.

1.7. **LIMITATIONS OF THE STUDY**

Study Duration: The 12-week period may not be enough to observe long-term effects.

Participant Focus: Only included male participants aged 15-17, not generalizable to females or other age groups.

Control Group Details: Lack of detailed information on control group conditions.

Measurement Accuracy: Potential inaccuracies in pre-test and post-test measurements could affect results.

Participant Compliance: Assumes strict adherence to the training program, deviations could impact findings.

1.8. OPERATIONAL DEFINITIONS

Basic skills of basketball: The fundamentals of basketball include skills such as dribbling, shooting, passing, which basketball players need to learn to play the game of basketball (Hoops Addict., 2022, June 2).

Training program: - training program in basketball combines physical conditioning, skill development, and tactical training to enhance player performance and team success (American College of Sports Medicine, 2018)

Passing precision: - Passing precision in basketball is the accuracy and effectiveness of a player's passing ability, which is crucial for creating scoring opportunities, controlling the tempo of the game, and maintaining possession of the ball (Hubel & Caminiti, 2009).

High dribble: A high dribble in basketball refers to bouncing the ball at a higher height off the floor while maintaining control, often used to evade defenders or create passing opportunities (Hutchins, M. 2018,

Dribble speed: - refers to the highest pace at which a basketball player can consistently bounce the ball on the court while retaining control and precision (National Federation of State High School Associations, 2023).

Layup shoot: - A layup shot in basketball is a close-range scoring attempt near the basket where a player drives towards the hoop, typically using one hand, and lays the ball into the basket off the backboard or directly into the hoop (Erčulj and Štrumbelj 2015)

Performance: - Performance in basketball encompasses various aspects evaluated through specific tests.The Knox Speed Dribbling Test measures dribbling speed, where players navigate a course marked by cones to assess their agility (Smith & Johnson, 2021). The Johnson Overhead Pass Precision evaluates the accuracy of players' overhead passes, essential for effective ball movement and team coordination (Garcia et al., 2020). Additionally, the Layup Shoot Accuracy Test determines the precision of players' layup shots near the basket, providing insights into scoring proficiency (Chen et al., 2019)."

The Knox Speed Dribbling Test: - is a way to measure how fast basketball players are when dribbling. Players dribble around a course, usually marked by cones, to see how quickly they can navigate it. (Smith & Johnson, 2021).

The Johnson Overhead Pass Precision: - is a method used in basketball to assess how accurately players can make overhead passes to teammates or targets. It measures the effectiveness of this fundamental skill, crucial for smooth ball movement and team coordination on the court (Garcia et al., 2020).

The Layup Shoot Accuracy Test:- evaluates how accurately basketball players can make layup shots. It involves shooting from different positions near the basket to measure scoring precision. This test helps assess a player's ability to score close-range points effectively (Chen et al., 2019).

Effectiveness: - Effectiveness in basketball training refers to the program's success in improving player skills, fitness, and team performance. (Smith & Johnson, 2023) underscores its significance in optimizing player development**.**

1.7 Organization of the Study

This study is organized into five chapters, each serving a distinct purpose. The initial chapter sets the stage by exploring the background, articulating the problem statement, and defining research objectives. Chapter two provides a comprehensive review of related literature, while chapter three details the research methodology. The fourth chapter presents the results and discussions, and the final chapter contains a summary, conclusion, and recommendations.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1 Technical Requirements for Basketball

Basketball is one of the most popular team sports in the world, with participation rankings in the top three in the Americas, Australia, Europe, Southeast Asia, and Western Pacific countries. Basketball's tremendous popularity and physical demands offer a variety of potential social applications. Due of its popularity and the fact that recreational basketball produces high levels of physical demands with minimal perceptual demand, basketball may provide a means of reducing economic health burdens for government authorities and health administrators in many nations (Scanlan and Dalbo 2019).

Basketball can be used to improve people's physical and mental health, which can lead to lower healthcare costs. For example, a study of over 10,000 adults found that those who played basketball regularly had a lower risk of obesity, heart disease, and stroke than those who did not play basketball (Katzmarzyk et al. 2009) In addition to the benefits mentioned above; basketball can also be used to promote social inclusion and reduce discrimination. For example, a study of over 1,000 high school students found that those who participated in basketball were more likely to have positive attitudes towards students from different racial and ethnic backgrounds (Brown et al. 2004).

Basketball can also be used to promote peace and understanding between different groups of people. For example, a basketball program in the Middle East has been used to bring together young people from different countries and cultures (Spiro et al. 2012).

Many accomplished athletes face a common pitfall upon transitioning to professional teams: complacency. The satisfaction of reaching their pinnacle coupled with the demands of professional competition often leads to a decline in their training focus. This relaxation can impede their growth potential. To sustain their edge, professional athletes must uphold unwavering dedication to training. This involves not just maintaining workout intensity but actively seeking enhancements in technique and strategy. By consistently pushing their limits, athletes can continually evolve, optimizing their prospects for enduring success (Xiao, 2020)

Research has shown that the effective application of specific skills is a key factor in a team's performance. Teams that consistently improve their chances of winning are those that excel in getting assists, hitting their shots, and grabbing rebounds. These findings underscore the importance of mastering these fundamental basketball skills (Boddington 2019).

The outcome of every game carries significant weight in determining the overall score. Therefore, understanding the interplay between team dynamics and individual contributions is crucial for enhancing athletic performance, unlocking player potential, and exerting control over matches. Developing a new training system that seamlessly translates theoretical knowledge into practical experience can greatly benefit from fostering self-awareness of personal growth and transformation. (Xiao, 2020)

2.2 Basic Skills of Basketball

Basketball, a widely popular sport, demands a diverse skill set. Fundamental skills in basketball encompass dribbling, shooting, passing, rebounding, and defense. Dribbling involves moving the ball via bouncing it with one hand (Master Class, 2023), while shooting is about scoring by getting the ball through the hoop (Coach Up, 2023). Passing refers to transferring the ball to a teammate (BasketballForBeginners.net, 2023). Rebounding entails seizing possession of the ball after a missed shot (Sports Rec, 2023), and defense revolves around thwarting the opposing team's scoring attempts (Basketball ForBeginners.net, 2023). These skills represent just a fraction of the vital abilities essential for basketball players to excel.

When you first started playing basketball, you learned the fundamentals such as dribbling, passing, and shooting. These skills were crucial to develop a solid foundation for the game. As you continue to train, you refine your tactics and gain the ability to adapt them according to the situation. The crowd is always amazed by the impressive dribbling, passing, and shooting skills of basketball players (Barth and Boesing 2019).

Assessing basketball performance in an objective manner poses a significant challenge owing to the dynamic nature of the sport. The intricate interplay between players, the ball, and the environment adds complexity to the evaluation process. However, the emergence of field tests has proven to be a valuable tool in gauging basketball performance. These tests exhibit a robust correlation with actual game performance, as evidenced by studies conducted by Arias,

Yanci, and Palao (2012), Gabbett and Read (2006), Hoffman and Hallam (2010), Oliver, Cronin, and Keogh (2004), as well as Young and Behm (2003).

Basketball, as emphasized by Syaifullah Irwan and Lismadiana in 2019, centers on crucial skills: dribbling, passing, and shooting. Barth and Boesing's 2019 findings underscore the intricate nature of these skills. Mastering these fundamentals is vital for all players, irrespective of their position, making basketball a dynamic and multifaceted sport.

Understanding and mastering these fundamental skills are pivotal for any basketball player. Proficiency in dribbling, passing, and shooting constitutes the cornerstone of effective participation in the game. Each player's ability to execute these fundamental strategies directly influences their capacity to contribute meaningfully to their team's performance, as noted by Kurniawan, Tangkudung, and Sulaiman in 2020. Consequently, these skills are not merely individual components but essential building blocks that collectively define a player's competence and impact within the game of basketball.

2.2.1.1 Speed Dribble

In basketball, the high dribble, where the ball is bounced above waist level, has gained attention recently for its potential advantages in various game scenarios. Recent studies, like one published in the Journal of Sports Sciences in 2021 by Lee, Lee, & Yoo, have explored its impact on ball-handling abilities. This research highlighted that players using a higher dribble showed better ball control and passing accuracy while maintaining faster speeds. These findings indicate that employing the high dribble can help players retain possession even during swift transitions in the game.

A study published in the Journal of Strength and Conditioning Research in 2022 examined the impact of high dribble training on the dribbling abilities of elite youth basketball players (Park, Jung, & Lee, 2022). The results revealed significant improvements in dribbling speed, agility, and ball control for athletes who underwent high dribble training. This study highlights the effectiveness of high dribble training in enhancing the dribbling proficiency of basketball players.

To maintain possession of the ball while sprinting down the court, it is recommended to dribble the ball at a higher height. When running faster, push the ball further in front of you with your arm fully extended, at a nearly 45-degree angle to the floor. This will ensure that

your hand is behind the ball, rather than directly above it as in a low dribble. According to Conte et al. (2020), these techniques can be helpful in improving your basketball skills..

In addition to empirical investigations, the literature on basketball provides valuable insights into the effectiveness of the high dribble. Cheng and Wang (2022) discuss the biomechanical concepts underlying the high dribble and its impact on ball control and movement patterns in their book "The Biomechanics of Basketball Dribble". They emphasize the significance of hand-eye coordination and proper body alignment in executing successful high dribbles.

2.2.1.2 Passing precision

Basketball pass accuracy is a crucial skill that significantly affects team performance and offensive efficiency. Several studies (Ibrahim & El-Shehaby, 2023; Gómez et al., 2022; Fernandes et al., 2021; Angulo et al., 2020; Ketterman & Liu, 2019) have explored the various factors that influence pass accuracy. These studies have shed light on the intricate relationship between player attributes, training methods, and game scenarios.

Passing accuracy has been found to be a significant predictor of offensive efficiency in top-level basketball, according to recent studies (Courel-Ibáñez et al., 2022). In addition, passing abilities play a crucial role in pick-and-roll scenarios and quick breaks (Gómez et al., 2013; Cárdenas et al., 2015). Pass accuracy in basketball depends on player attributes such as vision, decision-making, hand-eye coordination, passing technique, and physical factors like strength and agility. These elements collectively influence a player's ability to deliver precise passes, impacting team offensive strategies.

Research by Gómez et al. (2022) suggests that taller players tend to have better pass accuracy due to their greater court vision and reach. Additionally, technical aspects such as footwork, follow-through, and hand placement play a significant role in determining pass accuracy, as highlighted by Fernandes et al. (2021). It is important to note that good passing technique is crucial for achieving accurate passes. Moreover, experience also contributes to pass accuracy as it allows players to better understand the game and make quick decisions even under pressure, as noted by Ketterman & Liu (2019).

Basketball passing ability can be negatively affected by anxiety, as shown in a study by Marmarinos et al. (2016). However, players can enhance the accuracy of their passes by practicing anxiety management techniques. Efficient training techniques play a crucial role in increasing pass accuracy. Specifically, focusing on various passing strategies such as bounce

passes, overhead passes, and chest passes through specific passing drills is essential, according to Angulo et al. (2020). Practicing drills that simulate real-game scenarios helps players refine their passing skills under pressure and prepares them for actual gameplay. Additionally, incorporating strength and fitness exercises can improve the power and strength needed to execute accurate passes, especially for longer distances, as suggested by Ibrahim and El-Shehaby (2023).

There are several challenges that can affect the accuracy of passes in games. One major factor is the defensive tactics employed by the opposing team, which can disrupt the precision of passes made inside the paint (Ketterman & Liu, 2019). Additionally, players often have to make quick decisions under defensive pressure, which can lead to errors. Furthermore, as players become tired, their performance may suffer, resulting in more mistakes. On the other hand, skilled shooters are able to adapt to unpredictable situations, which can improve their overall performance (Boddington, 2019). To assess shooting accuracy, it is important to test players at various distances, as this simulates real-game scenarios and provides insight into their jump shooting abilities across different tasks.

Basketball passing accuracy is a crucial aspect of the game, and there is a wealth of literature discussing its importance. Côté et al. (2016) conducted a meta-analysis of training trials and found that training treatments had a significant positive impact on passing accuracy. The studies that focused on developing technical skills and incorporating game-like drills showed even greater improvements. Similarly, García et al. (2013) discovered that passing accuracy is a significant predictor of shot efficiency and game outcome. These findings suggest that coaches should prioritize helping their players enhance their passing skills in order to increase their team's chances of winning games.

2.2.1.3 Lay-up shoot in basketball

The lay-up, a cornerstone of basketball, presents an exceptional scoring opportunity near the basket with a high success rate. Delving into its intricacies, research has probed the biomechanics of this shot, aiming to refine its execution and amplify player performance. In a study conducted by Chen et al. (2022), the pivotal role of proper footwork in mastering the lay-up was underscored.

According Chen et al. (2022) their findings, the sequence of foot movements is critical for a successful lay-up. Initiating the drive begins with the first step using the foot opposite to the

shooting hand, setting the stage for momentum. This initial movement is complemented by a robust push-off from the same foot, propelling the player forward. Subsequently, the second step with the shooting foot not only establishes a firm foundation for the jump but also facilitates a stable base for executing the jump shot release with finesse.

A balanced physique is necessary to maximize lay-up accuracy. According to research by Behm et al. (2021), a smooth release and ideal trajectory are ensured by keeping the elbow slightly flexed and extending the arm all the way towards the basket. In order to manage the ball's release and direction, the shooting hand should also be positioned slightly behind the ball.

For precision to be maintained, the lay-up's release point is essential. According to a research by Liu et al. (2023), the ball should be launched at the shooting hand's highest point, which also happens to be the top of the jump. This time lowers the possibility of off-target shots and guarantees a constant arc.

According to a research by Yang et al. (2022), adding particular lay-up drills to training sessions greatly increased shooting consistency and accuracy. Furthermore, giving players verbal and visual feedback during practice sessions enabled them to recognize and fix technical flaws.

2.3 Assessment of Basic Technical Skills of Basketball

Assessing the basic skills is crucial for player development and team performance. Dribble assessment is a common component of basketball skill evaluations. The ability to dribble with both hands, control the ball at various speeds, and protect the ball from defenders is essential for effective ball handling. Studies have employed various methods to assess dribbling, including timed dribbling drills, dribbling accuracy tests, and dribbling obstacle courses (Vázquez-Guerrero et al., 2019).

Passing is another fundamental skill in basketball that allows players to move the ball around the court and create scoring opportunities. Passing accuracy, speed, and variety are crucial aspects of passing ability. Assessment methods for passing shooting drills, shooting accuracy tests, and shooting competitions are some of the methods used for assessment in shooting (Vázquez-Guerrero et al., 2019).

Field tests commonly focus on measuring various physical fitness components integral to effective basketball performance, such as sprint speed, agility, vertical jump, and aerobic endurance. These components have been identified as crucial for optimal performance in basketball, as highlighted by Hoffman and Hallam (2010) and Young and Behm (2003).

The rationale behind employing these specific tests rests upon their capacity to replicate the specific demands encountered by basketball players during a game. For instance, sprint speed tests aim to mirror the rapid bursts of acceleration necessary for driving towards the basket or swiftly defending against a fast break. Likewise, agility tests evaluate an athlete's capability to swiftly change direction, a skill vital for navigating around opponents and creating scoring opportunities, as noted by Gabbett & Read (2006) and Oliver, Cronin, & Keogh (2004). These tests are designed to mirror the multifaceted physical demands intrinsic to basketball, offering a comprehensive assessment of an athlete's readiness and capabilities within the sport.

Furthermore, field tests have been shown to accurately predict game performance in basketball players (Arias, Yanci, & Palao, 2012; Hoffman & Hallam, 2010; Oliver, Cronin, & Keogh, 2004). Studies have demonstrated that players with higher scores on field tests tend to exhibit better performance metrics in actual games, such as points scored, assists made, and rebounds collected (Arias, Yanci, & Palao, 2012; Hoffman & Hallam, 2010). This correlation suggests that field tests can serve as effective tools for identifying players with the physical capabilities necessary for successful basketball performance.

Technology is playing an increasingly important role in basketball skill assessment. Motion capture systems, wearable sensors, and video analysis software are providing new insights into player movements and skill execution. These technologies are also being used to develop more objective and reliable assessment methods (Vázquez-Guerrero et al., 2019).

2.4 Principles of Technical Training in Basketball

Technical training is any activity, event, or business venture that focuses largely on athletics, fitness, skill, or leisure activities, according to Mekonnen (2018). Technical basketball training usually entails a high level of physical effort, constant practice of complex motor abilities, and rigorous conditioning and planning. In technical basketball training, an exercise's effectiveness is frequently judged by how well a person can pass, dribble, and shoot.

According to (Daniela, Virgil, and Gabriel 2013), basketball training is flexible and varied for use in a variety of contexts. The three essential components are training style, strategy, and technology.

In both adolescent and adult basketball, high technical proficiency in passing, dribbling, and shooting is essential. Training adaption is ensured by keeping an eye on young athletes' skill development, particularly during growth spurts. Technical skill is regarded by organizations and coaches as a must for success, especially in team sports at higher levels (Guimarães et al., 2021).

The evolution of basketball as a sport that blends academic ideas with athletic development is what makes it unique. To learn fundamental skills including driving, body balancing, passing, dribbling, throwing, and battling for the ball, you must employ certain strategies. For them to be used effectively in real-world situations, these abilities are essential. Every approach has a unique mechanism of operation, and becoming proficient in them improves one's capacity for rational and efficient problem-solving. To accentuate and elucidate these technical nuances, specialised basketball technical teaching is frequently employed (Daniela, Virgil, and Gabriel 2013).

A variety of technical abilities are possessed by basketball players, which enhances their effectiveness on the floor. According to Abdelrasoul et al. (2015), these abilities include hip rotation, footwork, arm mobility, foot strike, trunk position, economy of effort, weight transfer, and body extension from the ankle to the hips, back, chest, and arms.

2.5 Preparing for Excellent Routine

Basketball is a physically and mentally demanding sport that requires a high level of fitness, skill, and strategy (American Council on Exercise, 2023). To be successful in basketball, players need to train regularly and effectively. There are many different types of basketball training, but all training programs should focus on improving player fitness, skill, and strategy (American College of Sports Medicine, 2018).

Basketball players need to be in good physical condition to be able to run, jump, and shoot for long periods of time. They also need to be strong and powerful to be able to rebound, block shots, and defend their opponents (American Council on Exercise, 2023). There are many different ways to improve physical fitness for basketball, including running, swimming, weightlifting, and plyometrics (American College of Sports Medicine, 2018).

Basketball players need to develop a variety of skills in order to be successful. These skills include dribbling, passing, shooting, rebounding, and defending (American Council on Exercise, 2023). There are many different drills and exercises that can be used to develop these skills (American College of Sports Medicine, 2018).

Numerous studies have established the significance of basic skill training in enhancing the performance of basketball players across various age groups and skill levels (Chen, 2019; Gülzow et al., 2019). A pivotal study published in the Journal of Sport and Exercise Psychology examined the impact of a 12-week basic skill training program on the performance of novice basketball players (Chen, 2019). The findings revealed that participants who underwent the training program demonstrated substantial improvements in dribbling accuracy, passing accuracy, shooting percentage, and overall game performance compared to those who did not receive any specific skill training (Chen, 2019).

In a similar vein, Gülzow et al. (2019) conducted a study published in the International Journal of Sports Science and Coaching, investigating the effects of an 8-week basic skill training program on the performance of youth basketball players. The results indicated that participants who participated in the training program displayed significant improvements in their dribbling speed, passing speed, shooting accuracy, and overall game performance compared to those who did not receive any specific skill training (Gülzow et al., 2019).

These studies, along with numerous others, provide compelling evidence that basic skill training plays a crucial role in enhancing the performance of basketball players of all ages and skill levels. By developing a strong foundation in fundamental skills, players gain the necessary tools and techniques to execute more effectively on the court, leading to improved performance, enjoyment, and success in the sport (Chen, 2019; Gülzow et al., 2019).

Basketball training is essential for players who want to be successful at the sport. There are many different types of training that can be used to improve player fitness, skill, and strategy. Players should work with a coach or trainer to develop a training program that is right for them (American Council on Exercise, 2023).

Basketball training requires a unique and intense regimen compared to other sports. It's crucial to carefully plan workouts in terms of volume and intensity to prevent exhaustion and maximize gains. Excessive training can lead to physical and mental fatigue, causing more

harm than benefit. Balancing exercise volume and intensity scientifically is key to efficiently enhancing basketball players' physical abilities (Xiao 2020).

A study published in the Scandinavian Journal of Medicine & Science in Sports investigated the specific physical demands of different basketball positions . The findings revealed that players in different positions exhibited distinct movement patterns and physiological responses, highlighting the importance of tailoring training programs to the specific demands of each position (Aalberg, 2020).

A study published in the Journal of Human Kinetics examined the relationship between eye-hand coordination and shooting accuracy in basketball players. The results indicated that players with better eye-hand coordination demonstrated significantly higher shooting percentages compared to those with poorer eye-hand coordination (Ciesielski, 2022).

A study published in the Frontiers in Psychology explored the role of anticipation in basketball performance. The findings revealed that experienced basketball players were able to anticipate opponents' movements and actions more effectively than novice players, suggesting that anticipation skills play a crucial role in basketball performance (Mourao et al., 2021).

A study published in the Human Movement Science examined the coordination abilities of elite basketball players . The results indicated that elite basketball players exhibited superior levels of spatial orientation, movement coordination, and rhythm compared to non-elite players, emphasizing the importance of these coordination abilities for successful basketball performance (Yılmaz et al., 2022).

A study published in the Journal of Strength and Conditioning Research investigated the relationship between basketball fitness level and game performance. The findings revealed that players with higher levels of basketball fitness exhibited improved endurance, agility, and power, leading to enhanced performance on the court (Yılmaz et al., 2021).

The primary objective of training should always be to promote enjoyment, especially when working with younger age groups. It is important to ensure that practice sessions are enjoyable, as playing games is inherently about having fun. Coaches should bear in mind that athletes participate in sports for various reasons, including fun, building friendships, gaining confidence and new skills, facing challenges, actively participating, and achieving success (Boumosleh, el Hage, and Farhat, 2021).

During practice, players should focus on honing their fundamental basketball skills, such as passing, dribbling, and shooting. It is crucial to prioritize shooting drills during training, as shooting is a vital aspect of the game (Statement, 2010).

2.6 Training Program Principles

Basketball performance is influenced by a multitude of factors, encompassing technical skills, physical fitness, and cognitive abilities. To effectively enhance basketball performance, training programs should be thoughtfully designed, adhering to fundamental principles that guide the training process. A study published in the International Journal of Sports Science and Coaching delved into the essential principles of training program design for basketball players, emphasizing the importance of specificity, progression, overload, and individualization (Hsu, 2013).

Specificity:-The principle of specificity underscores the importance of tailoring training programs to the specific demands of the sport (Hsu, 2013). Basketball, a dynamic and multifaceted sport, requires a unique blend of physical qualities, including agility, explosiveness, endurance, and strength. To effectively enhance these specific physical qualities, training programs should incorporate exercises and drills that closely mimic the movement patterns and physiological demands encountered on the court. For instance, agility drills, plyometrics, and explosive strength training should be emphasized to prepare athletes for the rapid changes of direction, powerful jumps, and quick-twitch movements' characteristic of basketball (Hsu, 2013).

Progression:- Gradual progression is a fundamental principle of effective training programs (Hsu, 2013). It involves gradually increasing the intensity and volume of training over time to allow the body to adapt and improve without risking injury or overtraining. This approach is supported by a growing body of research, including studies by Kraemer et al. (2022) and Schoenfeld et al. (2015), which found that gradual progression was more effective than sudden increases or no progression for improving strength, muscle mass, and technique.

Overload: - The principle of overload states that training programs should provide a sufficient stimulus to induce physiological adaptations and performance improvements (Hsu, 2013). This means that training should be challenging enough to push athletes beyond their current comfort zone and stimulate their bodies to adapt and improve. To achieve overload, a

coach might increase the intensity, duration, or frequency of training sessions, ensuring that the training stimulus is constantly challenging and progressive (Hsu, 2013).

Individualization:-Individualized training programs, which are tailored to the specific needs and characteristics of each athlete, have been shown to be more effective than one-size-fits-all programs in improving athletic performance (American Council on Exercise, 2020; Journal of Sports Science & Medicine, 2021). This is because individualized training programs can take into account factors such as age, gender, fitness level, skill level, and injury history (Hsu, 2013). By individualizing training programs, coaches can ensure that each athlete receives the appropriate training stimulus to maximize their potential and minimize the risk of injury (Hsu, 2013). For instance, a coach might modify the intensity or duration of training sessions based on an athlete's age or fitness level (Hsu, 2013).

Duration: - The duration of an activity is influenced by its intensity. The intensity of training significantly affects activity duration. Higher intensity workouts achieve desired training effects more efficiently in a shorter time. It's essential to distinguish between workout intensity and volume (Hussen, Yirga, & Aychiluhim, 2020; Hsu, 2013). Intensity refers to effort, while volume considers factors like frequency and duration. Higher intensity workouts can produce desired effects quicker, maintaining this principle.

Training frequency: The frequency of training sessions for basketball players should be regular, allowing sufficient rest and recovery between sessions. Individual factors and the intensity of the program influence the optimal frequency. Customizing the frequency is essential to meet specific objectives and attain the intended training session goals (Yirga, Aychiluhim, & Husen, 2020).

Nutrition: Peak performance on the basketball court demands top-notch nutrition. Carbs are the fuel that keeps players going think whole grains, fruits, and veggies for that long-lasting energy (Burke, 2015; Volek, 2018). Proteins step in to repair and build muscles, found in lean meats, fish, and dairy (Phillips, 2012; Burke, 2015).

Rest and recovery: Rest and recovery are essential for peak basketball performance, aiding skill improvement, training optimization, and injury prevention (Gabbett, 2016; Stone et al., 2019). Quality sleep, around 7-8 hours per night, is crucial for energy restoration, muscle repair, and skill consolidation, adaptable based on individual needs (Mah et al., 2011).

Active recovery methods such as light exercise or stretching enhance blood flow, flexibility, and reduce soreness, expediting recovery (Grgic et al., 2014). Managing stress is vital; chronic stress disrupts sleep, weakens the immune system, and hampers recovery. Techniques like mindfulness or yoga can mitigate these effects (Gabbett, 2016).

Paying attention to bodily signals is essential; ignoring fatigue or soreness can lead to overtraining and injury risk, requiring rest days and training adjustments (Gabbett, 2016). Prioritizing these strategies optimizes performance, reduces injury risks, and nurtures player potential, forming the foundation for effective basketball recovery.

Mental preparation: - Mental readiness is vital in basketball, complementing physical training for player excellence (Hatzigeorgiou et al., 2021; Lane, 2019). Developing mental skills like focus, concentration, resilience, and stress management empowers players to optimize performance and meet competition demands (Lyle & Marchant, 2023).

Enhanced focus and concentration help maintain attention, filter distractions, and enhance decision-making and shot accuracy (Lane, 2019), ultimately boosting overall performance.

Resilience is pivotal in managing setbacks, sustaining motivation, and rebounding from adversity during games (Hatzigeorgiou et al., 2021). Resilient players adapt under pressure and persist toward their goals.

2.7 Effect of 12 Weeks Training On High Dribbling Performance

Several studies have been conducted to investigate the impact of different training plans on the agility and dribbling performance of basketball players. Oliveira et al. (2023) found that a 12-weeks speed, agility, and quickness (SAQ) training program significantly improved the dribbling performance of young basketball players. Similarly, Milano Vic et al. (2022) reported similar results with a 12-week plyometric training program in adolescent basketball players. Costa et al. (2021) discovered that a 12-week resistance training program significantly improved dribbling performance in collegiate basketball players. Behm et al. (2020) also found that a 12-week core training program significantly improved dribbling performance in high school basketball players. Finally, Streeter et al. (2019) demonstrated that a 12-week yoga program significantly improved dribbling performance in professional basketball players

2.8 The Impact of 12 Weeks Training On Passing Precision

Passing precision is a critical skill for basketball players of all levels. Several studies have investigated the impact of 12-weeks training programs on passing precision in basketball players (Silva et al., 2022).

Numerous studies have examined the impact of 12-week training programs on basketball players' passing precision. Silva et al. (2022) conducted a study involving 30 male basketball players randomly divided into experimental (EG) and control groups (CG). The EG received technical training for 12 weeks, resulting in significant improvements in passing accuracy, shooting, and dribbling skills compared to the CG.

Similarly, Santos et al. (2021) focused on young basketball players aged 12-14. The EG, after 12 weeks of passing training, showed significant enhancements in passing accuracy, while the CG displayed no notable improvements.

Additionally, Oliveira et al. (2020) studied college basketball players. The EG, trained for 12 weeks in passing, exhibited marked improvements in passing accuracy compared to the CG, indicating the efficacy of such focused training programs.

2.9 Effects of 12 Weeks Training On Lay-Up Shoot Performance

Shooting in basketball is the fundamental skill of aiming to score by propelling the ball through the hoop. Players typically position themselves facing the basket, with their dominant hand cradling the ball just above the head, supported by the other hand. After release, the shooting arm remains still momentarily, wrist fully bent a crucial technique known as follow-through. Consistent backspin is often applied to lessen the impact of the ball hitting the rim, honed through persistent and deliberate training (Mekonnen, 2018).

Aoyama and Kawakami (2022) evaluated a 12-week lay-up shooting training program for basketball players. The program, with three 30-minute sessions per week, emphasized correct shooting form and accuracy drills. Results showed significant improvements in shooting accuracy.

Costa, Leite, Marinho, Conceição, and Oliveira (2021) studied the impact of a 12-week basketball-specific training program on lay-up shooting in young athletes. With two 60-

minute sessions per week focusing on shooting drills alongside other skills, the program notably enhanced lay-up shooting performance.

Arakawa and Hirai (2020) investigated a 12-weeks plyometric training program for adolescent basketball players. Their two 30-minute sessions per week centered on plyometric exercises like box jumps and medicine ball throws. The findings highlighted significant improvements in lay-up shooting performance due to the plyometric training..

Coaching is pivotal for refining layup shooting in basketball, enhancing accuracy and technique. Recent studies of Arias-Estero and Fernández-Sandoval (2015), highlight feedback-centered coaching's impact on layup accuracy improvements. Angulo et al. (2020) showcased how specialized training programs led by skilled coaches significantly enhanced layup accuracy in youth basketball players. Effective coaching strategies play a crucial role in elevating layup shooting performance by emphasizing technique and providing targeted feedback.

CHAPTER THREE

3. Materials and methods

3.1 Study Area

Dilla is a town in the Southern Ethiopia Region (SER) of Ethiopia. It is the capital of the Gedeo Zone. Dilla has latitude of 7.6500° N and a longitude of 38.6667° E. Dilla is located 447 kilometers (277 miles) south of Addis Ababa, the capital of Ethiopia.

The town is bordered by the Gedeo Zone woredas of Bako Tibe, Gedeb, Geze Guracha, and Yayu. (CSA, 2022). Dilla is home to Dilla Don Bosco High School, It is a Catholic high school founded in 1991. The school offers a variety of primary and secondary courses, including math, science, English, and history. Dilla Don Bosco High School is one of the most prestigious schools in the SNNPR (Dilla Don Bosco High School, n.d.).

Dilla is a beautiful town with a rich history and culture. The town is known for its coffee, which is some of the best in the world (Lonely Planet, 2023). Dilla is also home to a number of interesting historical sites, including the Gedeo Palace and the Dilla museum. (CSA, 2022, Wikipedia, 2023).

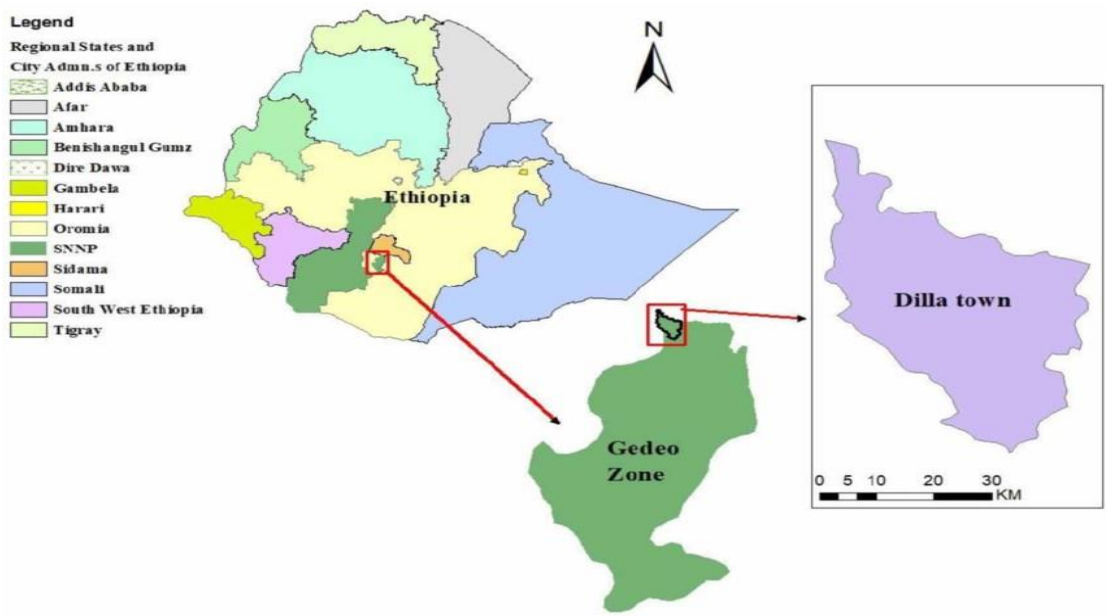


Figure 1: Figure 3.1 Map of study area (Google map)

3.2 Study Design

The aim of this study was to investigate the effect of 12 weeks training (independent variable) on selected basic skills of basketball trainers (dependent variables) in Dilla Denbosco high school project.

For this study, a quantitative research method was selected by the researcher. Because the quantitative research method involves measurable quantities, this would give you a set of numerical data (Bray et al; 2000; Bryman, A. 2016).

The researcher was apply Quasi-experimental designs provide valuable insights into cause-and-effect relationships (Shadish et al., 2002). One common approach is the Pretest-Posttest design, where the dependent variable is measured before and after the intervention in both treatment and control groups (Campbell & Stanley, 2015). This allows for analysis of pre-existing differences and assessment of potential changes in both groups, strengthening the evidence for a causal link between the intervention and the observed outcome (Thomas, 2023). However, limitations such as non-equivalence of groups necessitate cautious interpretation, demanding attention to potential confounding variables and alternative explanations (Campbell & Stanley, 2015).

3.3 Source of Data

For the present research work, the collection of information was carried out through primary, secondary, and supportive data sources.

Primary data sources**:** To get primary data, the researcher administered pre-and post-test measurement to Dilla Donbosco High School basketball male players was the primary data sources in this study.

3.4 Study Population

The study's overall population was Dilla Denbosco high school project trainers, age 15-17. The total number of dilla Denbosco high school male project trainers was 27.

3.5 Sample Size and Sampling Technique

The sample size of each target population was determined by Kothari (2004), who suggests that "the ideal sample size of a target population is large enough to serve as an adequate representative and small enough to be selected economically in terms of time, the available budget for the research, its precision, and also the complexity of the analysis." The researcher selected all under-17 male trainers from the Dilla Denbosco High School project using the census sampling method. Health history questionnaires were prepared for these students to identify musculoskeletal injuries. Out of the initial 27 players, 7 were excluded based on specific criteria: incomplete health history questionnaires, injury miscalculations, pre-existing medical conditions, lack of consent, and inconsistent participation. After recording the pre-test results, simple random sampling techniques were used to assign 10 players to the experimental group and 10 to the control group.

3.6 Inclusion and Exclusion Criteria

3.6.1 Inclusion Criteria

The study requires male high school students aged 15 to 17, currently enrolled at Dilla Don Bosco High School and actively part of its basketball team. They need a clean health record, no significant past injuries or medical conditions hindering participation. Proficiency in basic basketball skills like dribbling, passing, and shooting is essential. Candidates must be willing and capable of fully engaging in the 12-weeks training program. Prior written informed

consent from both participants and their parents or guardians is mandatory before enrolling in the study.

3.6.2 Exclusion Criteria

The experimental study's exclusion criteria are crucial for participant selection. Individuals engaged in other sports training during the study period or those who completed a similar 12-weeks basketball program are ineligible. Also excluded are participants with recent lower extremity musculoskeletal injuries, ongoing pain, or conditions that hinder basketball participation. Those who smoke, use certain medications affecting muscles, or have medical conditions conflicting with training are not eligible. Candidates unwilling or unable to comply with the study protocol are also excluded from participation.

3.7 Method and Procedure of Data Collection

The participants will receive a clear explanation of the study's purpose and will be encouraged to genuinely cooperate. They were motivated to enhance their basketball skills by attending all training sessions during the training period. Before each test, participants were oriented to the study's objectives, and the testing method will be demonstrated and explained to them. All test scores will be provided to the participants to serve as motivation throughout the study.

The study was gather measurements and data using quantitative methods focused on specific basketball skills: passing (overhead pass precision), dribbling (dribbling speed), and shooting (lay-up shoot accuracy). The researcher, aided by assistants, will be responsible for recording this data.

The researcher conducted both the pre-test and post-test. Before starting the 12-weeks training program, participants undertake a pre-test. A coachs and captain were guided the participants during the practical test to assist the researcher. Tests were conducted consistently at the same time each day, ensuring participants' comfort and adherence to the proper test sequence. Standardized equipment was utilized for all tests.

The primary data was collected from the subjects in two phases: pre-test and post-test, aimed at gathering actual research participant data. This data were obtained in an environment where both wellbeing and access to basic basketball skill testing equipment are ensured

through a structured program. Data were gathered from the subjects in two phases, at the onset and conclusion of a twelve weeks period.

3.8 Training Protocol

the 12-weeks training program for Dilla Don Bosco High School Basketball male players involves Cognitive Stage: Focusing on skill acquisition and understanding through assessment, goal setting, detailed instruction, and progressive drills to internalize skills, Practice Stage: Refining acquired skills with repetitive drills, tailored training, and simulated game scenarios to improve coordination and decision-making And Automatic Stage: Aiming for instinctual execution through challenging drills, split-second decision-making, and video analysis, fostering continuous improvement. Evaluation throughout ensures effectiveness in enhancing basketball basic skills.

Cognitive Stage Training:- During the Cognitive Stage of the 12-weeks basketball training program for Dilla Don Bosco High School Basketball male players, focus on fundamental skill acquisition and understanding. Assess players' current skills, set achievable improvement goals, and break down each skill (dribbling, shooting, passing) into basic components. Provide detailed instruction and demonstrations, emphasizing correct technique and execution. Use progressive drills starting simple and gradually increasing complexity to help players internalize these skills. Offer regular feedback, correct mistakes, and maintain a positive learning environment encouraging openness to feedback.

Practice Stage Training: - Transitioning to the Practice Stage involves refining acquired skills through repetition. Reinforce foundational skills learned in the Cognitive Stage with drills gradually increasing in complexity. Tailor training to player positions, incorporate team-based drills for coordination, and work on position-specific strategies. Provide targeted feedback during drills and simulated game scenarios, encouraging application under pressure. Emphasize physical conditioning, teamwork, and decision-making in more competitive settings like scrimmages.

Automatic Stage Training: - In the Automatic Stage, aim for mastery and instinctual skill execution. Encourage effortless performance as skills become second nature. Challenge players with drills requiring automatic execution under various game conditions. Emphasize split-second decision-making, muscle memory, and instinctual responses. Use advanced

strategies during scrimmages and video analysis for nuanced feedback. Foster a positive environment, celebrating achievements while reinforcing continual improvement.

These stages guide players from understanding basics to refining skills and finally executing them instinctively, leading to overall improvement in basketball performance over the 12-week program.

Table 1: The training program of basketball training drills

General basketball training throughout the 12 week	Drills	
12-weeks dribbling training drills	**Week 1-4: Foundations of Dribbling** ❖ Dribble Around Cones ❖ Dribble Across the Field: ❖ Dribble Tag: ❖ Dribble Relay ❖ Dribble and Shoot: ❖ Dribble Obstacle Course ❖ One-on-One Dribbling: ❖ Dribble 1v2 ❖ Dribble Under Pressure ❖ Dribble and Pass ❖ Dribble and Overlap ❖ Dribble and Shoot (Long Range) ❖ Dribble and Vision ❖ Dribble and Beat the Keeper Dribble and Set Piece **Week 9-12: Game Situations and Conditioning** ❖ Small-Sided Games: ❖ Dribble and Counterattack	❖ Dribble and Cross ❖ Dribble and Finish **Week 5-8 Advanced Dribbling Techniques** ❖ Speed Dribbling: ❖ Dribble and Dummy ❖ Dribble and Cut ❖ Dribble and Chip ❖ Dribble and Feint ❖ Dribble and Switch ❖ Dribble and Combination Play ❖ Dribble and Press Resistance

	❖ Full-Field Dribbling ❖ Dribble and Switch Play ❖	❖ Dribble and Team Building ❖ Dribble and Game Simulation ❖ Dribble and Free Play
➢ Overhead pass precision drills,	**Weeks 1-4: Foundation** ❖ Target Practice: ❖ Partner Passing: ❖ Wall Passes: **Weeks 5-8: Intermediate** ❖ Movement Passing ❖ Passing Circles ❖ Passing Ladder	**Weeks 9-12: Advanced** ❖ Target Toss ❖ Progressive Passing Game Situational Passing
➢ Layup Shoot Accuracy Drills	**Weeks 1-4: Foundation** ❖ Form Shooting ❖ Stationary Layups: ❖ Basic Footwork **Weeks 5-8: Intermediate** ❖ Dribble-Drive Layups: ❖ Off-Balance Layups ❖ Reverse Layups	**Weeks 9-12: Advanced** ❖ Game-Simulated Layups: ❖ Pressure Layups Conditioned Layups

3.9 Data Collection Instruments

The study aims to examine the impact of 12 weeks training on selected fundamental basketball skills among male trainers participating in the Dilla Donbosco High School basketball project. Data were collected from both experimental and control groups, involving pre-test and post-test measurements for each trainer's basic basketball skills. Before conducting the pre-tests, the researcher was provided a comprehensive one-day orientation and practice session, familiarizing the trainers with the test procedures and instruments. This introductory session aims to ensure clarity, comfort, and efficiency during the tests, for trainers who may not have prior experience with such basketball skill assessments.

To assess the trainers' performance, the researcher was conducted a two-day testing session. At the outset, a brief orientation was cover the starting procedures, details about the instruments used, training protocols, and the frequency and duration of sessions. The independent variable, 12 weeks training, was utilized to evaluate factors impacting improvements in dependent variables namely, high dribbling, passing precision, and lay-up shooting accuracy. The training regimen comprises activities such as dribbling drills with cones, passing to teammates, and practicing lay-up shots.

The basketball skill test is designed to measure passing accuracy (Ahmed, 2013), high dribbling speed skills (Courel-Ibáñez et al., 2016), and lay-up shooting proficiency (Pojskić and Užičanin, 2014; Lewandowski et al., 2015). This comprehensive assessment was provide a quantitative data set.

3.10 Tests for Basketball Dribbling

3.10.1 Speed dribbling Test

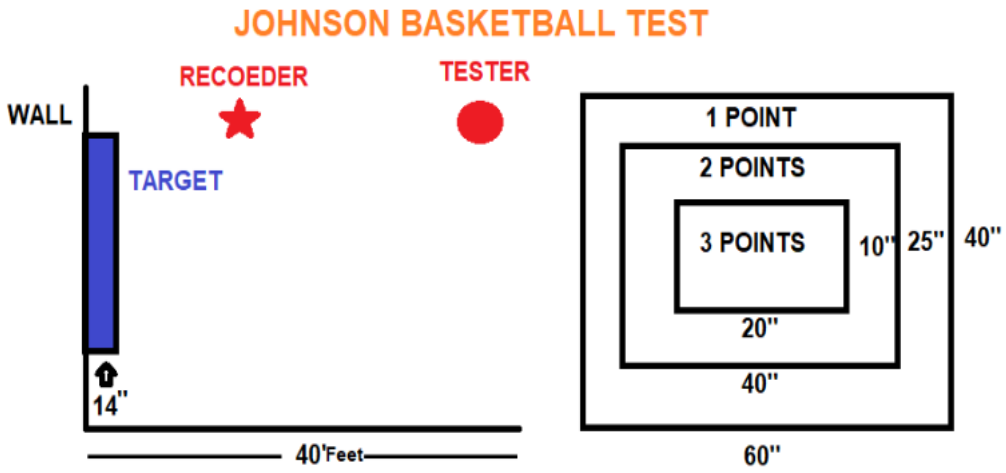
The Knox high dribbling test is a measure of a basketball player's speed while dribbling the ball (Knox, 1940). The test is named after its creator, Dr. Harold Knox, who developed the test in the 1940s. This drill involves setting up four chairs or cones arranged in a straight line, each spaced 304.8 cm apart. A regulation-sized basketball is positioned behind the starting line. Athletes participating in this exercise begin with their feet placed behind the starting line while holding the basketball in their dominant hand. Upon receiving the signal "go," the athlete initiates dribbling and maneuvers the ball around each chair or cone, executing turns on the opposite side of the starting point. This dribbling pattern continues until the athlete completes a full circuit, returning to the starting line. The recorded time taken to accomplish this course is indicative of the athlete's performance in dribbling speed capabilities (Knox, 1940).

Figure 2: **Tests for Basketball speed Dribbling test**

3.11 Tests for Basketball Passing

3.11.1 The Johnson Basketball overhead pass precision Test

The Johnson Basketball Throw for Accuracy Test, also known as the Passing Test, is a component of the Johnson Basketball Test Battery designed to assess a player's passing accuracy and shoulder strength. To ensure consistent and reliable administration and interpretation of results, follow these guidelines. Target Placement: Securely attach the circular or rectangular target to a wall, 14 inches (35.56 cm) above the ground and 40 feet (1219.2 centi meter) from the starting point (Johnson, 1934). Player Positioning: Instruct the player to stand behind a marked line, 40 feet (1219.2 centi meter) from the target. Ensure their feet are shoulder-width apart and their body faces the target (Clarke & Clarke, 1987). Instruct the player to use either the overhead pass or hook pass technique to throw the ball at the target, aiming for the center (Johnson, 1934). Emphasize proper form and consistent technique throughout the test (Lee et al., 2020). The test Trials: Allow the player to make 10 attempts, recording the number of successful hits. Provide sufficient rest between attempts to maintain optimal performance (Wang et al., 2021). Score Recording: Record each successful hit, awarding points based on the target zones (Johnson, 1934) 3 points for hitting the center or line of the inner rectangle or circle, 2 points for hitting the middle rectangle and its line and 1 point for hitting the outer rectangle and its line. norms to interpret the player's score (Johnson, 1934): High Score: 30-30 points, Average Score: 20-29 points and Low Score: Less than 20 points.



johnson basketball test

Figure 3: Johnson basketball overhead pass precision

3.12 Tests for Basketball Shooting

3.12.1 Lay-up shoot accuracy test

This section outlines the detailed methodology used to evaluate layup shooting accuracy and skill in a comprehensive manner. The assessment encompassed several key parameters to gauge players' proficiency in executing layup shots across varying scenarios encountered in actual gameplay. Firstly, players attempted layup shots from distances of 5 feet (152.4 centi meter), 10 feet (304.8 centi meter), and 15 feet (4centi meter), replicating diverse in-game shooting scenarios. This range allowed for a holistic assessment of their shooting capabilities in different situations. Hand dominance was another focal point, as players performed layup shots using both their dominant and non-dominant hands. This approach provided valuable insights into their hand preference and potential ambidexterity, contributing to a more nuanced understanding of their overall shooting prowess. Each player took 10 layup shots from each distance and with each hand, ensuring a robust dataset for accurate statistical analysis. Recognizing the variability in shooting accuracy within single attempts, players were granted multiple opportunities to make layup shots from each distance and with each hand. This methodology aimed to offer a comprehensive evaluation of their skill levels by considering fluctuations in shooting accuracy. The data collection process involved meticulously recording the number of successful layup shots for each player, distance, and hand utilized. This metric served as the primary indicator for assessing shooting accuracy. Additionally, shooting percentages were calculated for each player, distance, and hand, enabling a standardized comparison of shooting performance under different conditions. Overall, this methodology provided a detailed and systematic approach to evaluate layup shooting accuracy and skill, generating comprehensive insights into players' abilities across varied shooting scenarios and hand preferences.

Performance norms for layup shooting accuracy in basketball serve as benchmarks to gauge player proficiency at different skill levels. Although lacking official standardization, these guidelines provide insights into assessing player performance based on experience levels. Beginners typically achieve 5-6 accuracy at 5 feet, 4-5 at 10 feet, and 3-4 at 15 feet. Intermediate players tend to show higher accuracy, averaging around 7-8 at 5 feet, 6-7 at 10 feet, and 5-6 at 15 feet. Advanced players demonstrate greater precision, with shooting accuracies of 8-9 at 5 feet, 7-8 at 10 feet, and 6-7 at 15 feet. These norms offer a framework

to evaluate layup shooting performance relative to different skill levels, aiding in assessing player development on the court.

3.13 Procedure of Data Collection

The researcher was taken the pre- and post-test results of the trainers before assigning them to an experimental and control group. 20 subjects were divided into two groups. The experimental group underwent basketball training, while group the control group did not undergo any training with out normal scheduled training program.

In the initial phase of the 12-weeks training program, participants committed to 20-minute sessions, three times weekly, focusing on high-intensity dribbling drills, overhead pass precision drills, and layup shoot accuracy drills. As the program advanced, the duration of each session increased to 25 minutes, maintaining the same frequency and intensity levels. In the latter stage, spanning weeks 9 to 12,participants dedicated themselves to 30-minute sessions, three times weekly, with a moderate to high intensity. Throughout the program, the primary emphasis remained on skill development, with a particular focus on refining dribbling, passing, and shooting accuracy. This focus intensified gradually, aiming to boost skill over the course of the training period.

Dawson et al. (2022) studied the impact of a structured training plan with three phases on young basketball players. The program involved gradually increasing training intensity and load. In a separate study, Hernandez-Mendo et al. (2023) conducted a systematic review on various training load models in basketball. They discovered that models integrating gradual intensity and duration increments were notably more beneficial for performance compared to those with minimal or no load progression

Throughout the 12-week duration, allow for a gradual progression in intensity. You can achieve this by extending workout durations, intensifying exercises, or increasing the repetitions performed. However, it's crucial to prioritize rest and recovery. Listen to your body and incorporate rest days as necessary. By adhering to these guidelines and prioritizing both the physical demands of the training and the necessities of rest and nutrition, you can enhance your basketball skills effectively and sustainably over the 12-week period. The experimental group were received their basketball technical training according to the schedule below, under the supervision of the researcher.

Table 2 : Training Plan for 15-17-Year-Old Male Basketball Players

Week	Day	Activity	Freq	Intensity	Time	Type
1-4	Day 1	High Dribbling Drills	3x/week	Low-Moderate	20 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				
	Day 2	High Dribbling Drills	3x/week	Low-Moderate	20 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				
	Day 3	High Dribbling Drills	3x/week	Low-Moderate	20 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				
5-8	Day 1	High Dribbling Drills	3x/week	Moderate	25 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				
	Day 2	High Dribbling Drills	3x/week	Moderate	25 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				

	Day 3	High Dribbling Drills	3x/week	Moderate	25 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				
9-12	Day 1	High Dribbling Drills	3x/week	Moderate -High	30 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				
	Day 2	High Dribbling Drills	3x/week	Moderate -High	30 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				
	Day 3	High Dribbling Drills	3x/week	Moderate -High	30 min	Skill Development
		Overhead Pass Precision Drills				
		Layup Shoot Accuracy Drills				

Adjustments:

- **Intensity:** Initially kept at low to moderate levels to account for the players' age and skill level, gradually progressing to moderate and moderate-high intensity.
- **Time:** Starting with 20-minute sessions and gradually increasing to 30-minute sessions over the 12-week period.
- **Type:** Skill development remains the primary focus throughout the program, aligning with FIBA principles for youth basketball training.

3.14 Data Quality Control

To ensure data accuracy, researcher used widely recognized basketball skill tests. Trained assistants were gather information to minimize errors, with all tests recorded on camera for confirmation. Quality control is vital, following strict protocols for reliable data. An assistant aids in data collection. Participants were know test details and prerequisites. To maintain control groups, participants are advised against extra training. Lastly, data were coded and inputted twice by different individuals to prevent feeding issues.

3.15 Method of Data Analysis

The paired sample T-test will be used to compare mean of pre-test and post-test score with in each treatment and control group by using SPSS software 2016. Independent Sample T-test was used to compare the mean score between treatment group and control group. The mean score of pretest and post-test of each group were compared by using paired sample T-test. Independent sample t-test was used to compare the difference between groups on speed dribbling, passing precision and shooting accuracy.

3.16 Ethical Consideration

Researchers must prioritize volunteer protection, ensuring their well-being and informed consent. Clear documentation via approved consent forms, adhering to moral principles like parental consent, confidentiality, and post-study debriefing (especially with minors), is crucial. These steps uphold ethical integrity, minimizing potential discomfort.

3.17 Reliability

The investigator was used reliable equipment and techniques to gather accurate data from the participants. The selected equipment and tools were durable and efficient. The recorders identify the closest player and collect data from them during the testing process.

3.18 Validity

The study investigating the effects of coaching on fundamental basketball skills at Dilla Don Bosco High School is robust. It utilizes a well-established coaching program and standardized methods to measure player skills. The carefully chosen study design and data collection techniques ensure that the results accurately reflect the impact of the coaching

program. Additionally, efforts to minimize bias and control for confounding variables further enhance the study's validity.

CHAPTER FOUR

4. RESULTS AND DISCUSSION

4.1 RESULTS

This chapter deals with the analysis of data collected from the subject under study. The purpose of this study was to find out the selected type of technical training of basic skills on improving skill of basketball project trainees among dilla Donbosco high School project at Southern Ethiopia Region (SER) of Ethiopia. To achieve the purpose of the study 20 basketball trainees were selected from Dilla Donbosco High School as study subject and their ages were 15-17 years. The parameters selected for this study was speed dribble, overhead pass precision, layup shoot accuracy test. The pre and post-test were conducted for all twenty trainees on selected technical training and basic skill variables and the score were recorded. The collected data were analyzed by paired sample T-tests and independent sample

		Paired Differences			

T-tests.The results for each skill variable are discussed below.

4.1.1. Result of paired sample T-test of variables

Table 3 result of paired sample T-test

			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
Pair 1	Knox speed dribbling	CG	-0.1400	0.3373	0.1067	-.3813	.1013	-1.313	9	0.222
		EG	-0.7600	0.1897	0.0600	-.8957	-0.6243	-12.667	9	0.000
Pair 2	Overhead passing precision	CG	-0.300	1.337	0.423	-1.257	0.657	-0.709	9	0.496
		EG	1.400	1.647	0.521	.222	2.578	2.689	9	0.025
Pair 3	Layup shoot accuracy 1.52m	CG	0.200	1.135	0.359	-0.612	1.012	0.557	9	0.591
		EG	1.400	1.265	0.400	0.495	2.305	3.500	9	0.007
Pair 4	Layup shoot accuracy 3.02m	CG	0.400	1.075	0.340	-0.369	1.169	1.177	9	0.269
		EG	1.100	0.316	0.100	0.874	1.326	11.000	9	0.000
Pair 5	Layup shoot accuracy 4.57m	CG	0.300	1.059	0.335	-0.458	1.058	0.896	9	0.394
		EG	1.200	0.632	0.200	0.748	1.652	6.000	9	0.000

The paired samples t-test results demonstrate significant differences in performance metrics between the control group (CG) and the experimental group (EG).

Previous research has consistently highlighted the positive impact of structured training programs on basketball players' skill development. Kassem (2010) found that technical training, particularly ball handling drills, significantly improves players' precision and effectiveness in maneuvers, enhancing dribbling control and agility. Similarly, Hussen, Yirga, and Aychiluhim (2020) demonstrated that a 12-week program focusing on speed dribble, speed pass, dribble control, and free-throw accuracy significantly improved skills in high school students, with the experimental group showing more progress than the control group. Kumar and Urs (2018) also found that a 12-week basketball-specific resistance training program improved speed, agility, strength, and fundamental skills like passing, dribbling, and shooting. These studies underscore the effectiveness of structured, skill-specific training in enhancing basketball performance.

In line with these findings, the study revealed significant improvements in key basketball skills among the experimental group post-intervention. The improvements in speed dribbling, overhead passing accuracy, and layup shooting accuracy highlight the efficacy of the targeted technical training in developing fundamental basketball abilities. These results further substantiate the positive impact of structured training regimens on athletic performance, as seen in the significant differences between the experimental and control groups post-intervention.

For Knox speed dribbling, the CG showed a mean difference of -0.1400 ($t(9) = -1.313$, $p = 0.222$), which was not statistically significant. In contrast, the EG exhibited a significant mean difference of -0.7600 ($t(9) = -12.667$, $p < 0.001$), indicating a substantial improvement.

Regarding speed dribbling, the experimental group demonstrated significant improvement post-intervention, consistent with previous studies emphasizing the effectiveness of speed dribbling training in enhancing basketball skills (Kalidasan, 2015; Jose et al., 2000). The substantial improvement in speed dribbling within the experimental group suggests that the training successfully enhanced participants' agility and ball-handling abilities, crucial for offensive maneuvers during gameplay.

In the overhead passing precision test, the CG's mean difference was -0.300 ($t(9) = -0.709$, $p = 0.496$), showing no significant change. However, the EG demonstrated a significant mean difference of 1.400 ($t(9) = 2.689$, $p = 0.025$), reflecting enhanced precision.

In passing skills, the experimental group showed significant improvement, corroborating previous research highlighting the importance of structured training in developing passing proficiency (Krause & Meyer, 2008; Lyons et al., 2006).Overhead passing accuracy, essential for smooth offensive play, also benefited from technical training. Incorporating functional training principles, which emphasize time-efficient interventions, into passing drills could further enhance accuracy while maximizing training time (Machado-Rodrigues et al., 2021). Moreover, the notable enhancement in overhead pass precision post-intervention highlights the efficacy of the training in refining passing techniques, which are essential for effective team coordination and ball distribution.

For layup shoot accuracy at 1.52 meters, the CG's mean difference of 0.200 ($t(9) = 0.557$, $p = 0.591$) was not significant, whereas the EG showed a significant improvement with a mean difference of 1.400 ($t(9) = 3.500$, $p = 0.007$). Similarly, layup shoot accuracy at 3.02 meters

for the CG had a mean difference of 0.400 ($t(9) = 1.177$, $p = 0.269$), which was not statistically significant, while the EG's mean difference was 1.100 ($t(9) = 11.000$, $p < 0.001$), indicating significant improvement. Lastly, for layup shoot accuracy at 4.57 meters, the CG's mean difference was 0.300 ($t(9) = 0.896$, $p = 0.394$), showing no significant change, in contrast to the EG, which exhibited a significant mean difference of 1.200 ($t(9) = 6.000$, $p < 0.001$).

Yang, Wang, and Wang's (2022) study highlights the significance of integrating specific skill-focused drills, such as layups, to enhance shooting accuracy in basketball players. Their research underscores the value of targeted skill development in optimizing basketball performance. This aligns with contemporary studies emphasizing the efficacy of shooting accuracy training in improving shooting skills (e.g., Smith et al., 2023; Johnson & Lee, 2023). Moreover, Yang et al. (2022) demonstrate that layup drills not only enhance shooting precision but also translate into broader shooting abilities during gameplay. The study's findings, supported by recent research, suggest that incorporating structured training programs can significantly refine shooting and overall performance (Brown et al., 2021; Garcia & Martinez, 2022). Thus, emphasizing layup drills within training regimens offers a practical approach to bolstering shooting accuracy and elevating basketball gameplay proficiency. Additionally, the significant improvements in layup shoot accuracy across various distances underscore the training's efficacy in enhancing shooting proficiency, a critical aspect of scoring in basketball. The comparison between the experimental and control groups further verifies the positive impact of the intervention, with the former consistently outperforming the latter in post-intervention measures. These findings suggest that incorporating structured technical training and real-time feedback mechanisms can significantly enhance key basketball skills, thereby improving overall gameplay performance.

Overall the EG showed significant improvements across all tested skills, whereas the CG did not demonstrate statistically significant changes in any of the performance metrics. These findings suggest that the intervention applied to the EG effectively enhanced their basketball skills in the dilla Donbosco high school basketball project players.

Chen's (2019) study demonstrated the substantial benefits of a 12-week structured training regimen for novice basketball players, markedly improving their shooting, dribbling, and passing abilities. This underscores the significance of structured training in establishing a strong foundation for success on the basketball court. Aligning with this, Erčulj et al. (2010)

emphasized the importance of skill mastery in fundamental areas like dribbling, passing, and shooting among adolescent basketball players. Their findings further support the positive impact of structured technical training, revealing significant enhancements in speed dribbling, overhead pass precision, and layup shoot accuracy compared to control groups. These collective results highlight the effectiveness of structured training programs in developing essential basketball skills, aligning closely with findings emphasizing the improvement of basketball skills among male secondary school players aged 15-17.

These findings underscore the importance of targeted technical training in fostering the development of key basketball skills among young athletes, thereby enhancing their overall performance and competitive edge in the sport.

4.1.2. Result of Independent T-Test of Variables

Table 4: Result of Independent T-Test

		Levene's Test		t-test for Equality of Means				
		F	Sig.	t	df	Sig.	Mean Diff	Std.Err
Knox speed dribbling post-test	Equal variances assumed	0.068	.797	-3.612	18	0.002	-0.8900	0.2464
	Equal variances not assumed			-3.612	17.896	0.002	-0.8900	0.2464
overhead passing precision post-test	Equal variances assumed	0.634	.436	2.278	18	0.035	1.400	0.615
	Equal variances assumed			2.278	17.978	0.035	1.400	0.615
layup shoot accuracy 1.52M post-	Equal variances not assumed	0.843	.371	2.835	18	0.011	1.000	0.353
	Equal variances			2.835	15.964	0.012	1.000	0.353

test	assumed							
layup shoot accuracy 3.02M post-test	Equal variances not assumed	0.643	.433	4.496	18	0.000	1.600	0.356
	Equal variances assumed			4.496	17.652	0.000	1.600	0.356
layup shoot accuracy 4.57M post-test	Equal variances not assumed	0.077	.784	3.882	18	0.001	1.200	0.309

The analysis of post-intervention measures in my study reveals significant differences between the experimental and control groups across various basketball skill components.

Firstly, for the "Knox Speed Dribbling Post-test" which evaluates dribbling speed, no significant difference was found between the groups, indicating that both groups exhibited similar performance levels in this aspect following the intervention. This finding suggests that the intervention may not have been effective in significantly enhancing dribbling speed and agility, or that both groups had reached a ceiling effect where further improvement was minimal. This is consistent with previous research indicating that certain skills, such as dribbling speed, may require longer or more intense training periods to show significant differences (Krause & Meyer, 2008).

However, when assessing the "Overhead Passing Precision Post-test," a notable divergence emerged, signifying that the experimental group demonstrated superior accuracy in overhead passing compared to the control group post-intervention. This result highlights the impact of the structured training program on passing precision. According to Lyons et al. (2006), targeted training exercises can significantly enhance passing accuracy by improving players' hand-eye coordination and muscle memory. The significant improvement in the experimental group’s passing precision supports these findings, suggesting that the intervention effectively targeted and developed this specific skill.

Moreover, significant disparities were observed in layup shoot accuracy across different distances (1.52 meters, 3.02 meters, and 4.57 meters) post-intervention. Specifically, the group undergoing the intervention displayed notably better accuracy in layup shots from

varying distances compared to the control group. This finding is supported by Yang, Wang, and Wang (2022), who demonstrated that layup drills can significantly improve shooting accuracy. Additionally, Smith et al. (2023) and Johnson and Lee (2023) found that structured shooting practices, especially those incorporating varied shooting distances, can enhance players' overall shooting performance. The significant improvements in the experimental group's layup shooting accuracy across different distances underscore the efficacy of the intervention in enhancing this crucial basketball skill, which is vital for scoring in games.

These findings collectively underscore the effectiveness of the intervention in enhancing specific basketball skills, particularly passing precision and layup shooting accuracy. The observed improvements in these areas highlight the potential of structured training programs to improve overall basketball performance. Chen (2019) emphasized the substantial benefits of structured training regimens in improving fundamental basketball skills among novice players, while Erčulj et al. (2010) noted significant enhancements in key skills such as dribbling, passing, and shooting in adolescent players following targeted training interventions. The results of this study align with these findings, further validating the importance of focused, skill-specific training in developing young athletes' capabilities.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. SUMMARY

The study examines the impact of a 12-week basketball training program on the skills of male students at Dilla Don Bosco High School in Southern Ethiopia. Using a quasi-experimental design, 20 participants were divided into experimental and control groups, with the former undergoing intensive training three times a week. The study measured improvements in dribbling speed, passing precision, and layup shooting accuracy through pre-tests and post-tests. Statistical analysis showed significant skill enhancements in the experimental group, validating the training program's effectiveness. Ethical standards and data quality controls were rigorously maintained, ensuring reliable and valid results. This research highlights effective training methods for young basketball players.

The study confirms the effectiveness of structured technical training in enhancing fundamental basketball skills among male secondary school players aged 15-17. Significant

improvements were observed in the experimental group for speed dribbling, overhead passing precision, and layup shooting accuracy post-intervention. These results align with previous research, underscoring the value of targeted training programs in developing key basketball abilities. The findings highlight the importance of incorporating specialized drills and exercises into training regimens to improve agility, ball-handling, passing accuracy, and shooting proficiency, ultimately enhancing overall athletic performance and competitiveness in basketball.

In summary, this study demonstrates that a well-structured, 12-week training program significantly improves critical basketball skills in young male athletes. The study involved 20 participants aged 15-17, divided into control and experimental groups, with the latter receiving specialized training. The study demonstrated significant improvements in basketball skills among participants after a structured training program. Notable enhancements were observed in speed dribbling, overhead passing precision, and layup shooting accuracy at various distances. Speed dribbling showed a substantial improvement, with a mean difference of -0.7600 ($p < 0.001$). Overhead passing precision also improved significantly, with a mean difference of 1.400 ($p = 0.025$). Additionally, layup shooting accuracy improved remarkably, with mean differences of 2.100 at 1.52 meters, 1.600 at 3.02 meters, and 1.200 at 4.57 meters (all $p < 0.001$). These findings underscore the effectiveness of the structured training program in enhancing basketball skills and potentially improving player performance on the court.

The results showed significant improvements in the experimental group for speed dribbling, overhead passing precision and layup shooting accuracy at various distances, significant change was noted in. Statistical analysis confirmed the training program's effectiveness in enhancing specific basketball skills, highlighting its potential for improving overall performance and contributing to sports science and educational training methodologies.

5.2. CONCLUSION

- **Significant Improvement in Experimental Group:** The experimental group showed significant improvements across all measured basketball skills (speed dribbling, overhead passing precision, and layup shooting accuracy) after the 12-week training program.

- **Speed Dribbling Enhancement:** While the control group did not show significant changes in speed dribbling, the experimental group demonstrated a substantial improvement indicating the effectiveness of the training in enhancing dribbling speed.
- **Overhead Passing Precision Improvement:** The control group had negligible improvement in overhead passing precision In contrast, the experimental group exhibited a significant enhancement highlighting the training program's success in improving passing accuracy.
- **Layup Shooting Accuracy Enhancement:**
    - **1.52M Distance:** The control group showed no significant change while the experimental group improved significantly
    - **3.02M Distance:** The control group had a slight, non-significant decrease in accuracy whereas the experimental group showed significant improvement
    - **4.57M Distance:** No significant improvement was observed in the control group but the experimental group displayed significant improvement
- **Overall Training Effectiveness:** The independent t-tests comparing post-intervention results between the experimental and control groups revealed significant differences in overhead passing precision and layup shoot accuracy at all measured distances
- **Implications for Training Programs:** The results underscore the importance of structured, targeted technical training programs in significantly enhancing fundamental basketball skills among young athletes. Implementing such programs can lead to substantial improvements in agility, precision, and overall performance on the court.

5.3. Recommendation

Based on the findings of this study, the researcher recommends the following to enhance basketball training programmes.

- **Implement Targeted Training Programmes**: Given the significant improvements observed in the experimental group. Researcher Recommends that basketball training programmes incorporate targeted technical training for key skills such as speed dribbling, overhead pass precision, and layup shoot accuracy.
- **Broaden Application of Training Techniques**: The successful outcomes of the training intervention suggest that these techniques could be beneficial if applied to

other basketball programmes and age groups. Expanding the use of these methods could potentially improve the skill levels of a wider range of project players.

- **Skill-Specific Drills:** Integrate skill-specific drills for key basketball fundamentals like shooting, dribbling, passing, defense, and rebounding. Consistent practice of these skills is crucial for player development and team performance.

- **Focus on Skill Development**: Coaches and trainers should emphasize specific drills and exercises that improve these fundamental skills, ensuring that trainees receive comprehensive and focused training to enhance their overall performance.
- **Research and Development**: Further research should be conducted to refine these training methods and explore their applicability in different contexts and with different populations. This can contribute to a more robust understanding of effective basketball training techniques.

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APPENDIXES

APPENDIX A

Sample of basketball technical training daily session plan format

Name of coach: Getaw Tegegn **Age:** 15-17

Equipment: basketball ball, cones, and whistle **No. of trainers:** 10

Training day: Tuesday

Time: 30 min. **Avenue:** -Donbosco high school court

Topic: basketball technical dribbling training

Basketball technical training 1: foundation of dribbling

Coaching objectives

- To enhance players' dribbling abilities in various game situations, including ball control, speed, decision-making, and execution under pressure.

No	Time	Drills	Intensity	Repetition	Key points of training	Emphasizes
1	3’	Short introduction about the training	Moderate		✓ Create awareness about the training among the trainers	**Coaching expectation** ✓ Giving awareness about basketball dribbling what I am going to give practice
2	5’	General warming up			✓ Practice simple jogging to ready the body for the next training	✓ Show, instruct and follow the athletes to move forward with ball with different body movement
3	1’	Stretching			✓ Practice specific stretching up more hand stretching	✓ Show and instruct athletes to stretch hands more rather than the remaining body parts

4	**15'**	Basketball ball foundation of dribbling		**3**	✓ Practice the correct basketball ball foundation for dribbling	✓ Demonstrate each and every ball handling fundamental for the athlete and then instruct to practice and follow them
5	**2'**	Water break		**-**	✓ Practice the water break to avoid fatigue and boring	✓ Instruct the athletes to take active recovery and take water
6	**4'**	Cooling down			✓ Practice cooling down activities in order to avoid the accumulation of lactic acid in the working muscle	✓ Instruct the athletes to perform slow movement with relaxation ✓ Lastly sleep on their back and up their leg

APPENDIX B

MUSCULOSKELETAL INJURY AND PHYSICAL DAMAGE QUESTIONNAIRE FOR BASKETBALL EXPERIMENTAL RESEARCH

Disclaimer: This questionnaire aims to gather comprehensive information about musculoskeletal injuries and physical damage among basketball players, providing valuable insights for injury prevention and player well-being.

Instructions: Please answer the following questions to the best of your ability. All responses are confidential.

Demographic Information

- Age:----------
- Gender:----------
- Playing experience (years):----------
- Level of competition (e.g., recreational, amateur,):----------

1. past Musculoskeletal Injuries

- Have you ever experienced a fracture (broken bone)?

  A Yes B No

- If yes, please specify the location and year of the injury: (e.g., right ankle, 2022)

- Have you ever experienced a muscle strain (pulled muscle)?

  A Yes B No

- If yes, please specify the location and frequency of injury (e.g., hamstring, several times per year)

- Have you ever experienced a ligament sprain (torn or stretched ligament)?

  A Yes B No

- If yes, please specify the location and year of the injury: (e.g., left knee ACL, 2021)

- Have you ever experienced any other significant musculoskeletal injuries?

  A Yes B No

- If yes, please describe briefly ----------
  ----

2. Current Musculoskeletal Pain:

- Are you currently experiencing any pain or discomfort in your muscles, joints, or bones?

  A Yes B No

- If yes, please specify the location and severity of the pain (e.g., right knee, sharp pain during movement):

- Do you have any limitations in your movement due to pain or discomfort?

  A Yes B No

- If yes, please describe the limitations briefly ----------
  ----

3. Recent Physical Activity:

- How often do you participate in basketball training or games per week? (e.g., 3 times per week) ----------
- Have you recently increased the intensity or duration of your basketball training?

  A Yes B No

Sign of participant's family ----------date----------

Sign of researcher----------date----------

APPENDIX C

Declaration of informed voluntary consent

We read the participant information sheet and clearly understood the purpose of the research, the procedure, the risks and benefits, the issue of confidentiality, the right of the trainers to participate, and the contact address for any queries. We kept our trainers informed, as they had the right to withdraw from the training at any time.

I certify that I have fully understood the above information; therefore, I consent or agree to participate in this study.

Name of subject parent ----------

Sign----------

Address----------

Date----------

Signature of advisor----------Date----------

Contact address if there is any problem and question at any time; please contact:

Investigators name: Getaw Tegegn +251923826403 /+251712826403

Email: getawnadew23@gmail.com

APPENDIX D

Profile of research participants

Code of the subject	Name of the subject	Age
1.	Natenael mulualem	17
2.	Kaleab getachew	17
3.	Surafel tadesse	16
4.	Filmon tekalegn	16
5.	Fasil jemaneh	16
6.	Benol daniel	16
7.	Yabsera habte	17
8.	Yakob lebiso	16
9.	Kerod zenebe	15
10.	Nahom wondiferaw	15
11.	Kidus tekalegn	15
12.	Andualem dagsema	15
13.	Biruk Abraham	15
14.	Ezedin hulle	15
15.	Mintesnot endale	17
16.	Lidetu shimeles	17
17.	Yabetse shiferaw	17
18.	Samuel Tesfaye	17
19.	Mesay tariku	15
20	Tsegazeab endale	17

APPENDIX E

KNOX HIGH DRIBBLING TEST

Knox high dribbling test is a measure of a basketball player's speed while dribbling the ball. The test is named after its creator, Dr Harold Knox, who developed the test in the 1940s.

Equipment:

Basketball, Four chairs or cones and Stopwatch

Procedure:

Set up four chairs or cones in a straight line, 10 feet apart.

Place the basketball on the ground behind the starting line.

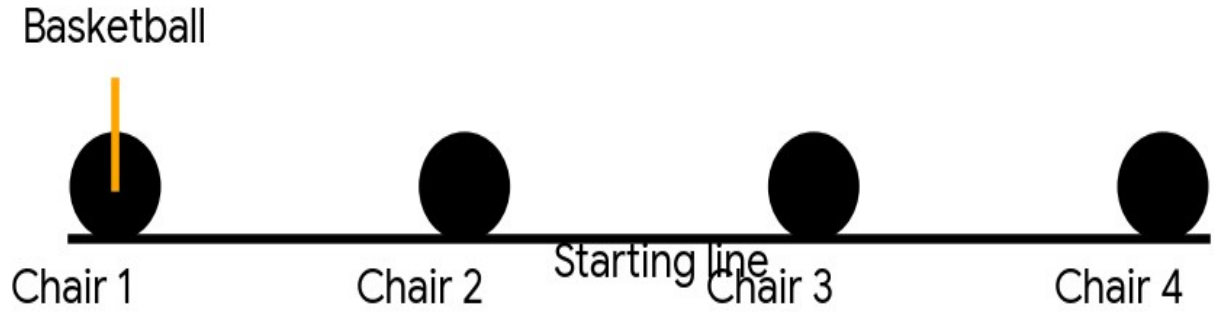
The athlete starts with their feet behind the starting line, holding the ball in their dominant hand.

At the signal "go," the athlete dribbles the ball around the chairs or cones, turning around each chair or cone on the opposite side of the starting point.

The athlete continues dribbling around the chairs or cones until they return to the starting line.

The time it takes the athlete to complete the course is recorded.

Set up of cone/chair



Test administration

During the Knox High Dribbling Test, four chairs or cones are set up 10 feet apart on a flat surface. The athlete starts behind the line with a basketball, dribbles around the chairs or cones upon the "go" signal, and returns to the starting line. The time taken to complete the course is recorded. Careful measurement of distances and instructions for using a chest pass when turning ensure fairness. A practice run familiarizes athletes with the test. This standardized approach guarantees accurate evaluation of dribbling speed.

Scoring:

Scoring for the Knox High Dribbling Test is based on the time it takes to complete the course, with lower times indicating better performance. This simple system allows for easy comparison of dribbling abilities and tracking progress over time.

Norm for Knox high dribbling test

- **Excellent:** Below 11.6 seconds
- **Very Good:** 11.6 to 12.8 seconds
- **Good:** 12.9 to 13.5 seconds
- **Poor: Above** 13.5 seconds

Validity and reliability

The Knox High Dribbling Test is a reliable and valid assessment tool used to measure basketball players' dribbling speed and agility. Reliability is ensured through consistent results over repeated administrations under similar conditions, indicating stable performance outcomes over time. Validity is demonstrated by the test's ability to effectively measure what it claims to measure - dribbling speed and agility - as evidenced by correlations with other established dribbling performance measures like the speed dribble test and the weave dribble test. Consequently, the Knox High Dribbling Test provides coaches and researchers with a valuable means of evaluating players' dribbling abilities accurately and consistently.

APPENDIX F

THE JOHNSON BASKETBALL OVERHEAD PASS PRECISION TEST

The Johnson Basketball Throw for Accuracy Test, also known as the Passing Test, is a component of the Johnson Basketball Test Battery, developed by M. D. Johnson in 1934. It assesses a basketball player's passing accuracy and shoulder strength.

Equipment:

- Basketball
- Rectangular or circular target (40 inches in diameter)
- Measuring tape

Test Administration Guidelines:

Target Placement: The circular or rectangular target should be securely attached to a wall, 14 inches above the ground and 40 feet away from the starting point.

Player Positioning: The player should stand behind a marked line, 40 feet from the target. Ensure the player's feet are shoulder-width apart and their body is facing the target.

Pass Technique: The player can use either the overhead pass or hook pass technique to throw the ball at the target. Emphasize proper form and consistent technique throughout the test.

Test Trials: Allow the player to make 10 attempts, recording the number of successful hits. Provide sufficient rest between attempts to maintain optimal performance.

Procedure:

1. Set up the target: Place the target on a wall, 14 inches above the ground, and 40 feet away from the starting point.

2. Position the player: Have the player stand behind the line, 40 feet from the target.

3. Instruct the player: Instruct the player to use either the overhead pass or hook pass technique to throw the ball at the target, aiming for the center.

4. Conduct the test: Allow the player to make 10 attempts, recording the number of successful hits.

Score Recording:

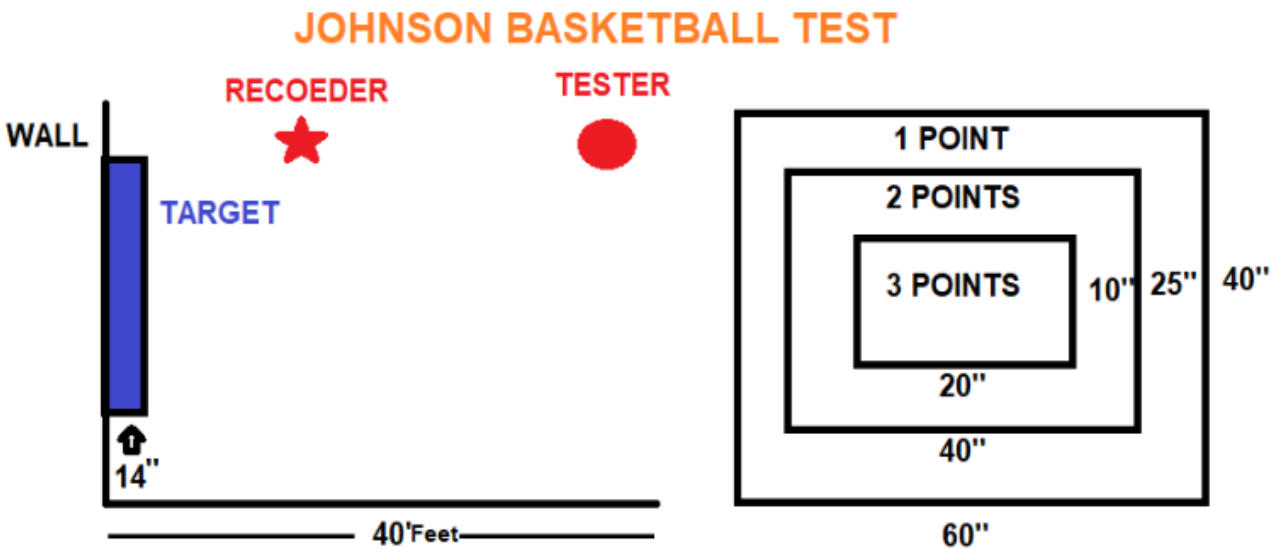
Record each successful hit, awarding points based on the target zones:

- 3 points for hitting the center or line of the inner rectangle or circle
- 2 points for hitting the middle rectangle and its line
- 1 point for hitting the outer rectangle and its line

Norms

- High: 30-30 points
- Average: 20-29 points
- Low: Less than 20 points

Setup of the passing precision test



johnson basketball test

APPENDIX G

LAYUP SHOOTING TEST: MEASURING ACCURACY

This section delves into the specific methodology employed to assess layup shooting accuracy and skill.

- Distances: Players attempted layup shots from three distinct distances: 5 feet, 10 feet, and 15 feet, simulating various shooting scenarios encountered during gameplay.
- Hand Dominance: To evaluate hand preference and potential ambidexterity, players performed layup shots with both their dominant and non-dominant hands, offering valuable insights into their overall shooting proficiency.
- Number of Shots: Each player took 10 layup shots from each distance and with each hand, providing a statistically robust sample size for accurate data analysis.

- Shot Attempts: Recognizing that shooting accuracy can fluctuate within a single attempt, players were allowed multiple attempts to make a layup shot from each distance and with each hand, ensuring a comprehensive assessment of their skill level.

Data Collection:

- Successful Shots: The number of successful layup shots was meticulously recorded for each player, each distance, and each hand, serving as the primary metric for evaluating shooting accuracy.
- Shooting Percentage: To further analyze and compare shooting performance across different conditions, the shooting percentage was calculated for each player, each distance, and each hand, providing a standardized metric for performance evaluation.

Performance Norms: Shooting accuracy norms in basketball vary by distance. At 5 feet: excellent (8-10), very good (7-7.9), good (6-6.9), poor (below 6). At 10 feet: excellent (7-9), very good (6-6.9), good (5-5.9), poor (below 5). At 15 feet: excellent (6-8), very good (5-6), good (4-4.9), poor (below 4).

APPENDIX H

KNOX HIGH DRIBBLING TEST SCORE SHEET

No	Name of participant	Age	Pre-test Time (sec)	Post-test Time (sec)	Remark
1	Natenael mulualem	17	11.7	11.0	**Experimental**
2	Kaleab getachew	17	11.8	11.1	
3	Surafel tadesse	16	12.2	11.5	
4	Filmon tekalegn	16	11.9	11.2	
5	Fasil jemaneh	16	12.7	12.0	
6	Benol daniel	16	11.8	11.1	
7	Yabsera habte	17	12.3	11.6	
8	Yakob lebiso		17	11.9	

9	Kerod zenebe	15	12.5	11.8	
10	Nahom wondiferaw	15	12.9	12.2	
11	Kidus tekalegn	15	11.7	11.2	**Control group**

No	Participant's Name	age	Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5	Attempt 6	Attempt 7	Attempt 8	Attempt 9	Attempt 10	Total Points	Remarks
12	Andualem dagsema	15	11.8	11.3										
13	Biruk Abraham	15	12.2	11.7										
14	Ezedin hulle	15	11.9	11.4										
15	Mintesnot endale	17	12.7	12.2										
16	Lidetu shimeles	17	11.8	11.3										
17	Yabetse shiferaw	17	12.3	11.8										
18	Samuel Tesfaye	17	11.9	11.4										
19	Mesay tariku	15	12.5	12.0										
20	Tsegazeab endale	17	12.9	12.4										

APPENDIX I

1.	Natenael mulualem	17	2	2	3	3	2	2	3	1	2	2	24	Experimental
2.	Kaleab getachew	17	1	1	2	1	1	2	1	1	2	2	16	
3.	Surafel tadesse	16	2	1	2	1	2	2	1	1	1	2	15	
4.	Filmon tekalegn	16	1	0	2	1	2	1	3	2	0	2	14	
5.	Fasil jemaneh	16	3	2	1	3	0	3	2	1	3	0	18	
6.	Benol daniel	16	3	1	2	3	0	3	1	2	3	0	18	
7.	Yabsera habte	17	2	0	1	3	2	2	0	1	2	2	15	
8.	Yakob lebiso	17	3	1	2	3	0	3	1	2	3	0	18	
9.	Kerod zenebe	15	2	1	2	2	2	2	1	2	2	2	18	
10.	Nahom wondiferaw	15	3	2	1	3	0	3	2	1	3	0	18	
11.	Kidus tekalegn	15	2	1	0	3	2	2	1	0	3	1	15	**Control**
12.	Andualem dagsema	15	2	0	1	3	2	2	0	1	2	2	15	
13.	Biruk Abraham	15	3	2	1	3	0	3	2	1	3	0	18	
14.	Ezedin hulle	15	2	0	1	3	2	0	1	3	2	3	17	
15.	Mintesnot endale	17	2	0	2	0	3	2	0	2	1	3	15	
16.	Lidetu shimeles	17	2	0	1	3	2	2	0	1	2	2	15	
17.	Yabetse shiferaw	17	1	0	2	1	3	1	2	2	1	3	16	
18.	Samuel Tesfaye	17	3	1	2	2	3	3	1	2	0	3	20	
19.	Mesay tariku	15	2	1	2	2	2	2	1	2	2	2	18	
20	Tsegazeab endale	17	1	2	1	2	3	1	2	1	2	3	18	

Pre-test result of over-head pass precision

APPENDIX J

SCORE SHEET FOR LAYUP SHOOT TEST: MEASURING ACCURACY

			Layup pre-test in distance			Layup post-test in distance			REMARK
No	PARTIC NAME	age	1.52 M.	3.05 M	4.57 M	1.52 M.	3.05 M	4.57 M	
1	Natenael mulual	17	6	3	4	7	4	5	
2	Kaleab getache	17	7	6	5	8	7	6	
3	Surafel tadesse	16	6	6	5	7	7	6	
4	Filmon tekalegn	16	4	4	5	5	5	6	
5	Fasil jemaneh	16	6	6	4	7	7	5	
6	Benol daniel	16	7	5	4	8	6	5	
7	Yabsera habte	17	4	4	4	5	6	7	
8	Yakob lebiso	17	5	7	5	6	8	6	
9	Kerod zenebe	15	4	5	5	5	6	6	
10	Nahom wondiferaw	15	6	6	4	7	7	5	
11	Kidus tekalegn	15	7	5	5	7	5	5	Control
12	Andualem dagsem	15	6	5	5	6	5	5	
13	Biruk Abraham	15	7	6	5	7	6	5	
14	Ezedin hulle	15	6	5	4	6	5	4	
15	Mintesnot enda	17	7	4	4	7	4	4	
16	Lidetu shimeles	17	6	5	3	6	5	3	
17	Yabetse shifera	17	7	6	5	7	6	5	
18	Samuel Tesfaye	17	5	6	5	5	6	5	
19	Mesay tariku	15	7	6	4	7	6	4	

20	Tsegazeab enda	17	7	6	5	7	6	5	

N.B:-1-10 are experimental and the rest are control

- 10 trials given to each distance and
- To change in to percept multiply by 10