

Basketball Skill Coaching in Digital Age

Aydiner ATTILA^{1*} 

¹Istanbul Esenyurt University, School of Physical Education and Sports, Istanbul, Turkey

Original Article

Received: November, 24, 2019

Accepted: December, 27, 2019

Online Publishing: December, 31, 2019

Abstract

The aim of this study is to investigate basketball skill coaches who sell online basketball materials. Basketball skills training became a big sector with the development of the internet, social media, and new media. Basketball coaches are giving personal training to the basketball players and young kids, but also people who are not basketball coaches are giving personal training to professional basketball players and young kids. There is also a new way to teach basketball, which is called online coaching. There are many Web sites about teaching basketball skills with videos on the internet. The skills coaches have a YouTube channel and an Instagram account. Skills coaches use social media platforms to introduce themselves, make commercials, and lead the people to Web sites. On the Web sites, there are some options which are included in the membership system, taking lessons in real-time, online training and ongoing mentorship.

Keywords: Basketball, Skills Training, Personal Training.

* **Sorumlu Yazar:** Aydiner ATTILA, **E-posta:** aydinerattila@hotmail.com

INTRODUCTION

There is no basketball certification program for basketball skills coaching. FIBA has organized Coaching Clinics about the skills development for players and the fundamentals of basketball. The basketball federations are also held courses and workshops about individual development and skills development practices. The basketball federation's Web pages are analyzed. There are some clinics about skill development, but there is no result for the coaching certificate about the skills coaching or skills development coaching. Many Active NBA-WNBA and retired NBA-WNBA players are organized camps for children every summer. Skills development Coach Micah Lancaster has courses for the Coaches about skill development. These courses are given under the "Trainer University" title. Most of the skills trainers sold training videos under a structure of monthly and yearly membership costs. The skills trainers called the programs "academy, university, the basketball school, training camp, summer workout." The skill trainers called themselves as "Professor, Dr., Expert, Specialist, Player Development Trainer." More and more NBA players are working with personal skill trainers. With the help of social media, some trainers are using the exposure to become entrepreneurs, newsmakers, and even celebrities in their own right.

The sports media in the culture industry is thinking commercially and rebuilding the current business while presenting content that is dominated by popular sports branches. The sports media also functions to strengthen and develop this process of exploitation. Sports and media will be connected by a symbiotic link. Both feed on each other and strengthen each other. It was 1989 when Michael Jordan first reached out to Tim Grover. Jordan, who had yet to win a title, was looking for both a personalized program and the convenience to work out whenever he wanted to. "People who had individual coaches were Olympians," Grover says. "Michael was probably the first [NBA] guy to hire a guy full-time." Eventually, Grover became the trainer to work with. His work with Jordan helped him land Kobe Bryant as a client. "The success Michael and I had over the years, that was the selling point," he says (Paolo, 2018). In the NBA, every basketball team has its coaching staff. Head coach, associate head coach, and four assistant coaches. Every NBA team also has a Training Staff, which includes; head athletic trainer, manager of nutrition & wellness, assistant athletic trainer, athletic trainer & athletic performance liaison, equipment manager, director of strength and endurance training, massage therapist, physical therapist/asst. Athletic Trainer. There are team doctors; head team physician and director of orthopedic surgery, associate head team physician and director of primary care, assistant orthopedic surgeon, team dentist behind all these situations, why basketball players need skills trainers. Playing basketball at a high-level, players must have some physical and athletic attributes. To defend the offensive players, defensive players have to react fast. Offensive players explode to the rim and have to change speed to score points, to score without the ball offensive players know how to move without the basketball and have the right footwork. The basketball players should know about the x and o's for the team sets. In a set offense, offensive players must see the spacing that the team has. In defense, players must know the defensive strategies, when and which player has to double team, where, and when making traps.

The players must know what coaches want and expect from the players. The players must know the teammates' positives and negatives sides both in the offense and in the defense. These kinds of details are crucial for winning basketball games.

Basketball is a team sport. In the starting line-ups, there are five players for each team. In basketball teams, basketball players, physical characteristics, and skill levels are different. Some players can shoot the ball well; others are good at rebounding. A team can score a basket in very different ways. Teams are working on offensive and defensive tactics throughout the year. Coaches generally want from the players to share the ball in the offense.

In today's game, scouting is so sophisticated that an opponent will know the offense almost as well as both teams do (National Basketball Coaches Association, 2009). Sometimes if a team has a star player that his skill level is on another level, coaches can bring the ball in these kinds of player's hands and let the players make decisions for the team in offense. In NBA Basketball LeBron James and James Harden are these types of superstars have the physical attributions that are high level, but also, the skill set level is very high. These players all have court vision and shoot the ball well from the perimeter.

There is a various number of papers related to coaching in basketball, but there is an amount of paper related to basketball skills coaching. In this study, the aim is to identify the necessities of the basketball skills coaches for the game of basketball.

METHOD

The study was conducted as qualitative research, and written documents supported it (information data browsing), media research (Smith & Sparkes, 2016) and the case study method. The limitations of the research are the numerical values obtained from the YouTube and Instagram accounts of 14 basketball skills coaches since June 5, 2018.

FINDINGS

Social media technologies also have been growing significantly to support users to gain access to valuable knowledge through different resources (Muyingo & Kırık, 2017). As highlighted by (Aghae, 2010), the appearance of social media is groundbreaking; yet there may be confusion as to what exactly is included in this term and how it may differ from other similar and related concepts. There is an innovative use of interviews, focus groups, accounts, or other self-report methods to investigate the experience of actual sports performance (O'Donoghue, 2014). Therefore, in this paper, social media is implied to online technologies used by basketball skills development coaches', which are essential and supportive of basketball skills development coaches' business life, namely YouTube and Instagram.

Table 1. The Basketball skills coaches on the internet

Name-Surname	YouTube Channel Subscribers	Instagram Followers	Web Site	Merchandise	Video Materials	The players worked with
Micah Lancaster	>156.000	>227.000	✓	✓	✓	Victor Oladipo, Brandon Ingram, Kyrie Irving
Ganon Baker	>35.800	>33.800	✓	✓	✓	Kobe Bryant, LeBron James, Kevin Durant
Grayson Boucher	>4.280.000	>2.9 mil.	✓	✓	✓	Kota Gonzalez, Dylan Gonzalez
Drew Hanlen	>321.000	>197.000	✓	✓	✓	Joel Embiid, Jayson Tatum, Jordan Clarkson,
Rocky Ullah	>1.820.000	>319.000	✓	✓	✓	Tyler Ulis, Ahron Ulis
Alex Bazzell	Not Given	>54.900	✓	✓	✓	Trae Young, Candace Parker, Kyrie Irving
DJ Sackmann	>24.900	>389.000	✓	✓	✓	Scottie Lewis, Steve Nash, Andre Barrett,
Tim Martin	Not Given	>29.500	✓	✗	✓	Jawun Evans, Lavoy Allen, Trae Young,
Chris Brickley	Not Given	>782.000	✗	✓	✗	Donovan Mitchell, C. J. McCollum, Carmelo Anthony
Tim Grover	>3.560	>134.000	✓	✓	✓	Michael Jordan, Kobe Bryant
Devin Williams	>466.000	>309.000	✓	✓	✓	Jesse Jones
Chris Hyppa	>2.190	>51.400	✓	✗	✗	Avery Bradley, Courtney Vandersloot,
Ryan Razooky	>20.400	>101.000	✓	✗	✗	Johnny O'Bryant
Tyler Relph	>16.400	>409.000	✓	✗	✓	Skylar Diggins, Skal Labissiere, CJ Miles

Note: These variables are taken at the 07/10/2019. It may change today. Maximum three players written in the 'The players worked with' column.

In Table 1. In the first column, it included the name and surnames of Basketball Skills Coaches given. In the other columns, the number of YouTube Channel Subscribers, the number of Instagram followers, Web site availability, merchandise sale, Video Materials, and the Basketball Skills Coaches worked with has shown in Table 1.

1. Skills Development Approaches

1.1. Basic amazing

Become better at the basics. Become basic at the amazing. In professional basketball, there is no player development. Everything is focused on five on five and preparing for the next game.

1.2. Kaizen mindset

Players focus on the ability to control the inner manner. Every day the players get it something to get better. Making good habits.

1.3. Work on weaknesses

The players are working to improve their weaknesses.

1.4. Work on strengths for sharpness

The players are working for having to be great what skills players are good at.

1.5. The mamba mentality

To find ways for practice to get better every time in life. Waking up so early to go to practice outside or practice too late in the night at the gym, it does not matter the time or the place for working out.

2. Player And Skill Development Process

2.1. Block practice

Block practice is a traditional type of training. The player isolates a skill, and repeat the skill over and over for X amount of repetitions (Haefner, 2017).

2.2. Interleaving

Interleaving practice is where the player works on many skills within a sequence. Passing, shooting, and other skills (Haefner, 2017).

2.3. Random practice

A practice schedule in which various discrete or serial skills that are required for performance in the sport are practiced in random order, and where the learner does not practice the same task on two consecutive attempts (Volleyball Canada, 2018).

3. Player And Skill Development

The progression from one drill to the next drill is vitally crucial to the success of the workout. The workout should be creative/imaginative. The use of objects (cones, chairs, trash cans), are crucial to the success of the workout. Vary the angles of the drills to increase the imagination and grow the creativity. The workout has to be challenging, mentally challenging, with multi-dimensional drills that require the individual to think the game and use his basketball IQ (attacking the defense with three different dribble moves). Conditioning is such a vital part of the game. The mental, as well as the physical toughness, should be developed in the athlete during the workout. By doing these things, boredom and complacency are eliminated.

When training to enhance the physical qualities necessary for basketball, have to work on improving the athleticism. Practicing and playing basketball enhances basketball skills. The repetitive practice of basketball skills performed over time will bring about physical improvement (Basketball Anatomy, 2016). Likewise, players will not develop decision-making skills if the coaches only prescribe practice drills devoid of decision-making opportunities. There must be a

systematic application of game-based practice activities that require players to make decisions as required in-game situations (Leite et al., 2009). Considering the evolution of basketball game pace (Leite et al., 2007), players are demanded to possess a wide repertoire of technical and tactical aspects. These increasing demands reinforce players' polyvalence, and therefore, the ability to quickly solve problems through game-like situations. Thus, practice drills should encourage and optimize decision-making and, inevitably, their effectiveness in-game context (Abernethy, 2005).

Maximizing skill learning in practice settings is a key aim for sports coaches and practitioners (Eliasz, 2012; Hebert, Landin & Solmon, 1996). One approach shown to influence the rate, permanence, and adaptability of movement skill learning is practice scheduling, or the order in which skills are performed (Lee & Simon, 2004; Menayo et al., 2010; Shea & Morgan, 1979). Basketball is ultimately a late development sport. The important thing is how good going to be the players get on those years later when the players become professional players. The process has to be long, so the training plan has to prepare in long term conditions (Leite et al., 2009), (Memmert, 2006).



Figure 1. The Fundamentals and advanced skills in basketball

The fundamentals of basketball have shown in Figure 1. EBasketballCoach (2019). The principal basics skills in basketball are shooting, rebounding, dribbling, footwork, defense, passing.

Kioumourtzoglou et al., (1998) explains the Cognitive, Perceptual, And Motor Abilities In Skilled Basketball Performance;

3.1. Motor abilities

Rhythm (tempo maintenance), multi-limb coordination, dynamic balance, and wrist finger dexterity were considered to play important roles in basketball. Dunsting and Kephart (1965) stated

that rhythmic ability develops during the learning of locomotor skills, and the acquisition of rhythm is critical to the perception of time.

3.2. Cognitive abilities

Adam and Wilberg (1992) reported that experts' superior ability to acquire information from briefly presented visual displays might depend on their memory and the analysis of the display because following the offset of the display, more information available than become consciously report.

3.3. Perceptual abilities

The ability to process visual information quickly is a factor of crucial importance in many skills, sports, and games. As Adam and Wilberg (1992) stated, the excellence of the performance could be related to a performer's processing capacity and rate.

Despite the importance of these abilities, some potentially confounding variables (e.g., a trait of playfulness, intrinsic motivational orientation, domain-specific skills, general performance indicators, and convergent thinking abilities) could not be measured (Memmert, Baker & Bertsch, 2010).

4. Using of Training Devices

Sporting devices are described that can be utilized to improve player performance in basketball (Table 2. & Table 3). Having the right tools makes all the difference. As an athlete, or as a team, want to make sure that, not only working hard but working smart and maximizing the gym time. Being able to do that has a lot to do with the equipment that has at hand. Be able to prepare at an elite level; need to set mentally and physically up to do so.

Table 2. Training equipment using in basketball skills trainings























Equipment	Photo	Equipment	Photo
Agility Hurdles		Tennis Balls	
Dribbling Goggles		Blocking Pad	
Disc Cones		Solo Assist	
Multipurpose Resistance Bands		Resistance Sprints Parachute	
The D Man		Jump Rope	
Agility Ladder		The Big Cone	
Weighted Speed Vest		Resistance Bands	

Table 3. Basketball specific training equipment

Equipment	Photo	Description
Basketball		Every player needs a good basketball that can bring to work on the game.
Weighted Basketball Trainer		It is going to help a player work on extending the shooting range and also hand strength when dribbling.
Pro-Shot Finger Spacer		This training tool is designed to force players to keep proper finger spacing when shooting and dribbling.
PowerHandz		Gloves are weighted and come with an anti-friction surface.
Ball Hog Gloves		The idea behind ball hog gloves is to make it harder to control the basketball with the gloves on.
Kick Out Ball Return		A player to shoot and then have the ball returned to the player on the make.
Dribble Stick		The Dribble Stick helps to promote ball control by forcing the player to dribble over or under different height levels.
Double Double		Two basketball training tools in one. The Double Double is first going to allow shooters to work on shooting by making the rim smaller. Secondly, it provides an excellent cap to the rim as well. The cap has different raised grooves on it, which will allow for working on rebounding.

5. Using Of Analyse Methods For The Observation Of The Athlete For Skills Coaches

5.1. Data acquisition and processing

The Skill Coaches can put drills according to the player's heart rate. Skill Coaches must know the player's capability to adjust the workout tempo and select the drills to help the players to increase their physical contributions and skill set for the upcoming season.

5.2. Motion tracking and analysis systems

It is better to see and analyze player's movements with the motion tracking and analysis systems. It is possible to see the player's ball-body movement, ball-body placement, hand placement during shooting, shooting technic (for example elbow-in or out), footwork frequency.

5.3. Game analysis

In the professional leagues, all games included a box score that can see the player's statistics of the game. The statistics do not give all components of the games but gives a lot about the team's performance and the individual performances of the players. The Skills Coaches make adjustments to the player's needs by looking at the player's actual game statistics to create the workout plans for the players they are going to work with.

5.4. Quantification and Consideration

Testing and performance assessment tools are essential in the overall evaluation of athletes and provide feedback on the effectiveness of the speed, strength, power, agility, and flexibility programs used. The data that have collected presents many possible comparisons for coaches and athletes to use and will assist coaches with the direction and development of training programs. The testing results will also help motivate athletes to train to be better basketball players (National Basketball Conditioning Coaches Association, 2009).

DISCUSSION & CONCLUSION

At the looking the skills trainers all over the world, mostly the skills trainers are live based in the USA. Some Skills Coaches have their own company and some of working together for the same company or working together in an organization about basketball. The skills Coaches took advantage of living in the USA for coaching individuals the NBA players.

The skills coaches are become an essential role in basketball because of the type and shape of the basketball game playing today. Basketball changed a lot in recent years. Today's basketball game a lot one on one plays playing in games. The players attack the rim early or taking shots over a defender. The players have to run fast, able to jump high to play that kind of offense. The players also need the fundamental skills that can help the offensive features. The importance of the skills trainers precisely emerges here.

The skills coaches can work with the players at every level. There are some priorities before starting to train with players for skills trainers. Professional players want to develop the skill set to play more effectively on the offensive end. High school players want to learn new moves more. The skills coaches prepare the workout programs related to the player positions and player types that are going to train with. The mission of skills coaches is also to construct the player's in-game situations. Players have to know how to attack and where to attack the rim. The skills coaches have to be in collaboration with the player's actual team coaching staff. The skills trainers have to listen and learn the player's mental behaviors and physical properties from the actual team coaching staff.

The skills coaches make collaborations with the brands for sales & Marketing. In 2019 Basketball Skills Development Coach Chris Brickley, the first basketball trainer to sign a multi-year sneaker deal with Puma. In 2016 Grayson Boucher sign with the Deuce Brand (DePaula, 2019; Slam Staff, 2016).

Skills Coaches use these definitions to introduce themselves; "Skills trainer, Workout Guru, Basketball Scientist, Teacher of basketball, Skills Coach & Consultant, Player Development Coach." The people get online basketball materials to start with live broadcasting over the internet. People can watch all the games on the internet. The NBA and the EuroLeague offer packages for live games. A couple of years later, FIBA introduced the FIBA Online Academy. FIBA Academy Manager's Programme and FIBA 3x3 E-learning system. In 2007 EuroLeague introduced an e-learning course for the basketball coaches. Kori et al., (2014) reviewed 33 articles that considered

blended technology supporting reflection in teachers described as “technology-enhanced learning.”

As the internet is popularized, network teaching becomes a new teaching form which is being increasingly promoted and is widely applied in each teaching system. According to (Susilana, Si & Riyana, 2008), learning media serves to improve the quality of the teaching-learning process. In addition to learning media also serves to accelerate the learning process. The choice of media in the teaching and learning process has many types, just adjusting between learning objectives and the characteristics of the media. One example of the media used in learning is video media. Video media is part of audiovisual media, because the so-called in addition to having the form of a motion picture, it also emits an amplifying sound or sound in accordance with the image displayed (Mardiana, Doewes & Purnama, 2019).

The use of media as a learning resource in basketball is very important, which provides opportunities for trainees or basketball extracurricular beginners to be actively involved directly through the developed media (Wigiyanto, Soekardi & Hartono, 2019). Basketball videos become more popular with the established of YouTube. There are some companies like Nike, Coca Cola Company, Foot Locker, Adidas, Reebok, Pepsi, Under Armour make commercials using the basketball theme. Nike Brand open a YouTube channel named Nike Basketball and share basketball videos under the “Nike Pro Training Drills” and for the mental side of the game “Nike ProAnswers” videos. All of these make people dedicated to basketball and understand that basketball is not just occur the real game performances. Focusing just one player and one drill it makes people’s mind-opening with these training videos.

Video modeling examples are believed to have an enormous potential for sustaining students’ learning because they can deliver information concerning how to perform skills perfectly (Hoogerheide et al., 2016). Jarraya et al., (2019) According to the neuroscience literature, positive effects of video modeling examples on learning motor skills are mainly due to the activation of the Mirror-Neuron System (MNS). This system is a neurophysiological circuit distributed across the pre-motor cortex that is automatically activated when someone is observing another person performing an action (Buccino, Binkofski & Riggio, 2004; Rizzolatti & Craighero, 2004; Turella et al., 2009; Van Gog et al., 2009). The contents of the material in the video must be truly representative, for example, the existence of good simulation and demonstration material, in addition to the material content that is representative, the material also needs to be packed with multimedia in which there is text, animation, sound, and video accordingly (Pratama & Januarto, 2019).

According to Dwiyoogo (2010) the use of learning media in the teaching and learning process functions as an attractive learning medium, learning media overcomes differences in learning experiences, provides learning experiences that are difficult to accept from other ways, learning media fosters self-learning ability, learning media fosters learning excitement, Learning media makes it possible to increase interaction between participants.

According to Setyosari and Sihkabuden (2005) suggests four functions of media are as follows, (a) change the emphasis of formal education, which means that with the learning media that was abstract to be concrete, learning that was previously theoretical became functionally practical, (b) motivated learning, in this case, the media becomes an acatic motivation for students, because the use of instructional media is more interesting and concentrates students' attention, (c) provides clarity, so that the knowledge and experience of students can be clearer and easier to understand then the media can clarify it, (d) Provide learning stimulus, especially student curiosity.

The use of multimedia software is becoming more popular with the improvement in computer technology (Vernadakis et al., 2008). Basketball skills coaches use the power of the new media. Coaches share a lot of highlights and full episodes from training sessions on YouTube channels and Instagram accounts. There are instructions and links below on these videos about the Web sites and social media accounts of the Coaches for accessing the communication numbers, mail addresses, and full episode training videos. There is a danger in coaching that technology could be used as a substitute for poor coach education practice – that is, “doing things better, rather than doing better things” (Kirkwood & Price, 2014). Rather than reconstruct educational programs, the assumption is improvement and consolidation via the utilization of technology (Bayne, 2015). This means that applying technology uncritically within established pedagogical models is problematic because the technology gets manipulated to suit existing pedagogy and is subsumed within an existing pedagogical model (Flavin, 2016). (Antoniou et al., 2003), for example, examined the effect of multimedia computer-assisted instruction (MCAI), traditional instruction (TI), and combined instruction (CI) on learning rule violations in basketball by university physical education students. Written test results indicated that students in all groups improved their knowledge of rule violations but only those in the TI and CI groups retained this knowledge. Also, the researchers found that the TI group showed significantly greater retention than the MCAI group both in the written test and in total performance.

In recent times, Netflix; the storage of the tv series and movies make a big impact on the internet world. Masterclass Web site is another way to learn from the best e-learning platform. (Hew & Cheung, 2013) suggest that social media can assist in developing conversations between educators and learners and between learners. In a sport-related study, Goodyear, Casey, and Kirk (2014) looked at the interactions between five physical educators and a facilitator over a two-year period. The authors investigated social media as a means for a facilitator to support multiple teachers in a virtual location overcoming issues of time and cost, issues that are increasingly relevant for coach education. In 2018, eCoachBasketball was a brand-new platform dedicated to the basketball e-learning platform. NBCEA has partnered with the eCoachBasketball and NBA Coaches to bring the tips, drills, and workouts that can help all aspects of the game of basketball. There are drills for every facet of basketball taught by some of the NBA Coaches to ever do it.

SUGGESTIONS

Basketball Federations and FIBA can organize Skills Coaching certificate courses for Coaches. It can be some limitations for the participation of the Skills Courses — basketball test tracks based on basketball fundamentals. There can be three categories based on playing positions. 1-The point guard position, 2-The shooting guard and small forward position and 3-The power forward and the center position. For all these positions, basketball test tracks can be different. For Number 1 position, more dribbling moves and hesitation moves, for number 2 position more catch and shoot and use of the screens and for number 3 position more post-up skills and hook shot drills can be used in tests.

REFERENCES

- Abernethy, B. (2005). Theory to practise – Sports expertise. *Sports Coach*, 28(3), 1-3.
- Adam, J. J., & Wilberg, R. B. (1992). Individual differences in visual information processing rate and the prediction of performance differences in team sports: A preliminary investigation. *Journal of Sports Sciences*, 10(3), 261-273. Doi: <https://doi.org/10.1080/02640419208729925>.
- Aghaee, N. (2010). *Social media use in academia: Campus students perceptions of how using social media supports educational learning*. Master thesis, Uppsala University, Department of Computer and System Science, Uppsala, Sweden.
- Antoniou, P., Derri, V., Kioumourtzoglou, E., & Mouroutsos 1, S. (2003). Applying multimedia computer-assisted instruction to enhance physical education students' knowledge of basketball rules. *European Journal of Physical Education*, 8(1), 78-90. Doi: <https://doi.org/10.1080/1740898030080106>.
- Bayne, S. (2015). What's the matter with 'technology-enhanced learning'? *Learning, Media and Technology*, 40(1), 5-20. Doi: <https://doi.org/10.1080/17439884.2014.915851>.
- Buccino, G., Binkofski, F., & Riggio, L. (2004). The mirror neuron system and action recognition. *Brain and Language*, 89(2), 370-376. Doi: [https://doi.org/10.1016/S0093-934X\(03\)00356-0](https://doi.org/10.1016/S0093-934X(03)00356-0).
- DePaula, N. (2019, January 14). Basketball trainer Chris Brickley signs puma deal. Retrieved from https://www.espn.com/nba/story/_/id/25994933/basketball-trainer-chris-brickley-signs-puma-deal.
- Dunsting, J. D., & Kephart, N. C. (1965) *Motor enervations in space and time*. In J. Helmuth (Ed.), *Learning disorders*. Seatde, WA: Special Publ. Pp. 77-121.
- Dwiyogo, W. D. (2010). Dimensions of physical education and sports learning technology. *Malang: Wineka Media*.
- EBasketballCoach (2019, May 15). Basketball skill development simplified!. Retrieved from <https://ebasketballcoach.com/op/skills/>.

Attila, A. (2019). Basketball skill coaching in digital age. *Eurasian Journal of Sport Sciences and Education*, 1(2), 30-44.

Eliasz, K. L. (2012). *Examining the effects of learner-adapted practice on motor skill acquisition* (Doctoral dissertation).

Flavin, M. (2016). Technology-enhanced learning and higher education. *Oxford Review of Economic Policy*, 32(4), 632-645. Doi: <https://doi.org/10.1093/oxrep/grw028>.

Goodyear, V. A., Casey, A., & Kirk, D. (2014). Tweet me, message me, like me: using social media to facilitate pedagogical change within an emerging community of practice. *Sport, Education and Society*, 19(7), 927-943. Doi: <https://doi.org/10.1080/13573322.2013.858624>.

Haefner, J. (2017, February 20). Block, interleaving, & random practice. Retrieved from <https://www.breakthroughbasketball.com/fundamentals/random-practice.html>.

Hebert, E. P., Landin, D., & Solmon, M. A. (1996). Practice schedule effects on the performance and learning of low- and high-skilled students: An applied study. *Research Quarterly for Exercise and Sport*, 67(1), 52-58. Doi: <https://doi.org/10.1080/02701367.1996.10607925>.

Hew, K. F., & Cheung, W. S. (2013). Use of Web 2.0 technologies in K-12 and higher education: The search for evidence-based practice. *Educational Research Review*, 9, 47-64. Doi: <https://doi.org/10.1016/j.edurev.2012.08.001>.

Hoogerheide, V., van Wermeskerken, M., Loyens, S. M., & van Gog, T. (2016). Learning from video modeling examples: Content kept equal, adults are more effective models than peers. *Learning and Instruction*, 44, 22-30. Doi: <https://doi.org/10.1016/j.learninstruc.2016.02.004>.

Jarraya, M., Rekik, G., Belkhir, Y., Chtourou, H., Nikolaidis, P. T., Rosemann, T., & Knechtle, B. (2019). Which presentation speed is better for learning basketball tactical actions through video modeling examples? The influence of content complexity. *Frontiers in psychology*, 10. Doi: <https://doi.org/10.3389/fpsyg.2019.02356>.

Kioumourtzoglu, E., Derri, V., Tzetzis, G., & Theodorakis, Y. (1998). Cognitive, perceptual, and motor abilities in skilled basketball performance. *Perceptual and Motor Skills*, 86(3), 771-786. Doi: <https://doi.org/10.2466/pms.1998.86.3.771>.

Kirkwood, A., & Price, L. (2014). Technology-enhanced learning and teaching in higher education: what is 'enhanced' and how do we know? A critical literature review. *Learning, Media and Technology*, 39(1), 6-36. Doi: <https://doi.org/10.1080/17439884.2013.770404>.

Kori, K., M. Pedaste, Äli Leijen, & M. Mäeots. (2014). "Supporting reflection in technology-enhanced learning." *Educational Research Review* 11: 45-55. Doi: <https://doi.org/10.1016/j.edurev.2013.11.003>.

Lee, T. D., & Simon, D. A. (2004). Contextual interference. In A.M. Williams and N. J. Hodges (Eds.), *Skill Acquisition in Sport: Research, Theory and Practice* (pp. 29-44). London, England: Routledge.

Leite, N., Sampaio, J., Abrantes, C., & Ferreira, A. (2007). Physical and technical components in boys' under-16 basketball by game quarter. In *Iberian Congress on Basketball Research* (Vol. 4, pp. 133-136).

Leite, N., Vaz, L., Maças, V., & Sampaio, J. (2009). Coaches perceived importance of drills items in basketball players' long-term development. *Revista De Psicologia Del Deporte*, 18(3), 457-461. [Access address: <https://www.redalyc.org/pdf/2351/235116466031.pdf>].

Mardiana, A., Doewes, M., & Purnama, S. K. (2019). Development of learning media based on video tutorial on basketball based shooting techniques. *Journal of Education, Health and Sport*, 9(5), 298-303. Doi: <http://dx.doi.org/10.5281/zenodo.3156678>.

Memmert, D. (2006). Long-term effects of type of practice on the learning and transfer of a complex motor skill. *Perceptual and Motor Skills*, 103(3), 912-916. Doi: <https://doi.org/10.2466/pms.103.3.912-916>.

- Memmert, D., Baker, J., & Bertsch, C. (2010). Play and practice in the development of sport-specific creativity in team ball sports. *High Ability Studies*, 21(1), 3-18. Doi: <https://doi.org/10.1080/13598139.2010.488083>.
- Menayo, R., Sabido, R., Fuentes, J. P., Moreno, F. J., & García, J. A. (2010). Simultaneous treatment effects in learning four tennis shots in contextual interference conditions. *Perceptual and Motor Skills*, 110(2), 661-673. Doi: <https://doi.org/10.2466/pms.110.2.661-673>.
- Muyingo, R. I., & Kırık, A. M. (2017). Social media in the academic life of international students in Turkey: A survey study. *Uluslararası Kültürel ve Sosyal Araştırmalar Dergisi (UKSAD)*, 3(2), 205-218. [Access address: <https://dergipark.org.tr/tr/download/article-file/395646>].
- National Basketball Coaches Association. (2008). *NBA Coaches Playbook: Techniques, Tactics, and Teaching Points*. Human Kinetics.
- National Basketball Conditioning Coaches Association. (2009). *Preparación física completa para el baloncesto* (No. 796.323 N277p). Madrid, ES: Ed. Tutor.
- O'Donoghue, P. (2014). *An introduction to performance analysis of sport*. Routledge.
- Paolo, U. (2018). Training's day. Retrieved from <https://www.theringer.com/nba/2018/9/18/17869164/private-trainers-workouts-video-instagram>.
- Pratama, R., & Januarto, O. B. (2019). Video based learning for basketball referee. In *2nd International Conference on Sports Sciences and Health 2018 (2nd ICSSH 2018)*. Atlantis Press.
- Rizzolatti, G., & Craighero, L. (2004). The mirror-neuron system. *Annu. Rev. Neurosci.*, 27, 169-192.
- Setyosari, P., & Sihkabuden. (2005). *Learning media*. Malang: Elang Mas.
- Shea, J. B., & Morgan, R. L. (1979). Contextual interference effects on the acquisition, retention, and transfer of a motor skill. *Journal of Experimental Psychology: Human Learning and Memory*, 5(2), 179-187. Doi: <https://doi.org/10.1037/0278-7393.5.2.179>.
- Slam Staff (2016, February 9). Deuce brand signs streetball legend 'the professor' (Video). Retrieved from <https://www.slamonline.com/apparel/deuce-brand-signs-streetball-legend-professor-video/>.
- Smith, B., & Sparkes, A. C. (Eds.). (2016). *Routledge handbook of qualitative research in sport and exercise*. Taylor & Francis.
- Susilana, R., Si, M., & Riyana, C. (2008). Media pembelajaran: hakikat, pengembangan, pemanfaatan, dan penilaian. CV. Wacana Prima. [Access address: <http://staff.unila.ac.id/ambarita/files/2013/05/Pembelajaran-Komputer-UNIT-5.pdf>].
- Turella, L., Pierno, A. C., Tubaldi, F., & Castiello, U. (2009). Mirror neurons in humans: consisting or confounding evidence? *Brain and Language* 108, 10–21. Doi: 10.1016/j.bandl.2007.11.002.
- Van Gog, T., Paas, F., Marcus, N., Ayres, P., & Sweller, J. (2009). The mirror- neuron system and observational learning: implications for the effectiveness of dynamic visualizations. *Educ. Psychol. Rev.* 21, 21–30. Doi: 10.1007/s10648-008-9094-3.
- Vernadakis, N., Zetou, E., Tsitskari, E., Giannousi, M., & Kioumourtzoglou, E. (2008). Student attitude and learning outcomes of multimedia computer-assisted versus traditional instruction in basketball. *Education and Information Technologies*, 13(3), 167-183. Doi: <https://doi.org/10.1007/s10639-008-9061-0>.

Attila, A. (2019). Basketball skill coaching in digital age. *Eurasian Journal of Sport Sciences and Education*, 1(2), 30-44.

Volleyball Canada (2018, January 24). Planning guidelines for constant, variable, or random practice.
Retrieved from [http://vcdm.org/global/images/misc/Constant_Variable_or_Random_Practice\(1\).pdf](http://vcdm.org/global/images/misc/Constant_Variable_or_Random_Practice(1).pdf).

Wigiyanto, W., Soekardi, S., & Hartono, M. (2019). Multimedia development of android-based referee signals recognition application in basketball game for beginner players. *Journal of Physical Education and Sports*, 8(1), 76-82. Doi: <https://doi.org/10.15294/jpes.v8i1.26933>.