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COACHES PERCEPTIONS ON EFFECTIVE PRACTICE METHODS IN GOLF

Abstract:

Many golfers ask: “Why can’t I take my range game to the golf course”? The answer is simple. The practice methods employed by golfers may not be an effective method to retain and transfer golf skills. According to Hayman, Borkoles, Taylor, Hemmings, and Polman (2014) limited studies have indicated the correct developmental pathway and practice methods for amateur golf players to reach professional level. It is therefore crucial to investigate all aspects that might have an influence on the success of professional golf players. Research has indicated that expert performance is a result of years of practice and coaching, and not of talent alone (Ericsson, Prietula, & Cokely, 2007). The main objective of this study was to explore the perceptions of former and current Sunshine Tour players, members of the Professional Golfers’ Association of South Africa (PGA of SA), PGA of SA coaches and/or golf administrators on effective practice methods. Semi-structured interviews were conducted with 17 participants. This enabled the researchers to identify the most effective practice methods that may contribute to the effective transition from amateur to professional level. The results suggest that the current practice methods are not the most effective for reaching a professional level. Players need to interleave a number of different golf skills and techniques during practice sessions. The results also suggest that by incorporating spacing, variability and setting a challenge point for each activity, players may enhance their learning of specific golf skills. As a result, players will learn to transfer and adapt these skills successfully to any environment presented in a competition setting, such as a golf course. The results of this study can assist coaches in employing the correct practice methods, and consequently prepare golf players for professional level.

Keywords:

Practice methods, interleave, expert performance, amateur golfers, professional golfers, coaches

JEL Classification: L83

Introduction

During the 1900s the popularity of golf increased, and therefore more and more golf courses have been built (Forbes, 2014:2). In Africa alone, there are over 900 golf facilities and 512 of these are in South Africa (Royal and Ancient Golf Club, 2015:9). The environment of golf changes regularly as the game is played on a variety of golf courses and players are expected to adapt their skills to the changing environment. For this reason, golf is such a challenging game (Sams, 2015:23). This poses various challenges for golfers along with the psychological pressures, making it one of the most difficult sporting codes (Sams, 2015:23). What makes golf different is the fact that apart from the technical aspects needed, psychological factors also need to be taken into account. In addition to the changing environment, and the psychological pressure, there are also the specific skills and correct techniques necessary to perform well. In order for players to master the required skills and techniques needed, players need to employ effective practice sessions. In the following section more focus will be given to the learning process and practice methods in sport and specifically in golf.

Literature

Human learning and expert performance

According to Martens (2012:162) the learning process that a large number of players start with is the process of motor learning. Pienaar (2012:62), defines motor learning as the method in which motor skills are learned. This entails that players understand the manner in which information is learned, processed, and as such organise effective practice sessions. Motor learning can be defined as a metaphorical mental blueprint of a movement (Martens, 2012:162). For learning to occur, this movement needs to be practiced and consequently master a specific technical skill (Cooke, 2017:viii). Mental blueprints are only useful under conditions identical to those under which it was developed and learned. According to this, it is impossible for the brain to accommodate so many blueprints for each situation, especially in a sporting environment that is rapidly changing. Conversely, nowadays players learn complex technical skills by abstracting key pieces of information from performances to create rules on how to perform in the future (Martens, 2012:162). According to Martens (2012:163) players abstract the following four types of information about each movement. Firstly, the surroundings and the location of the player when the technique commenced. Secondly, the demands of the movement being executed, such as speed, direction, and power. Thirdly, the consequences as observed by the senses during and after the movement. Lastly, a comparison of the actual outcome with the planned outcome based on feedback (Rosalie and Müller, 2012:418). However, practicing these techniques is essential for a player's performance.

When players practice these technical skills, the above-mentioned feedback is used to adjust, adapt and improve their technique (Chiviakowsky and Wulf, 2002:408). By doing this, general rules for a motor program is developed (Pienaar, 2012:162). A motor program is a complex set of rules that is called into action when a player needs to produce certain sport-specific movements (Pienaar, 2012:162). These movements can be any sport-specific action, such as various different shots in a golf swing. Highfield *et al.* (2019:10) refers to this process as a motor system, which is how movement takes place. However, there is much more that takes place when a player performs a golf swing. The sensory system decides what needs to be done before a

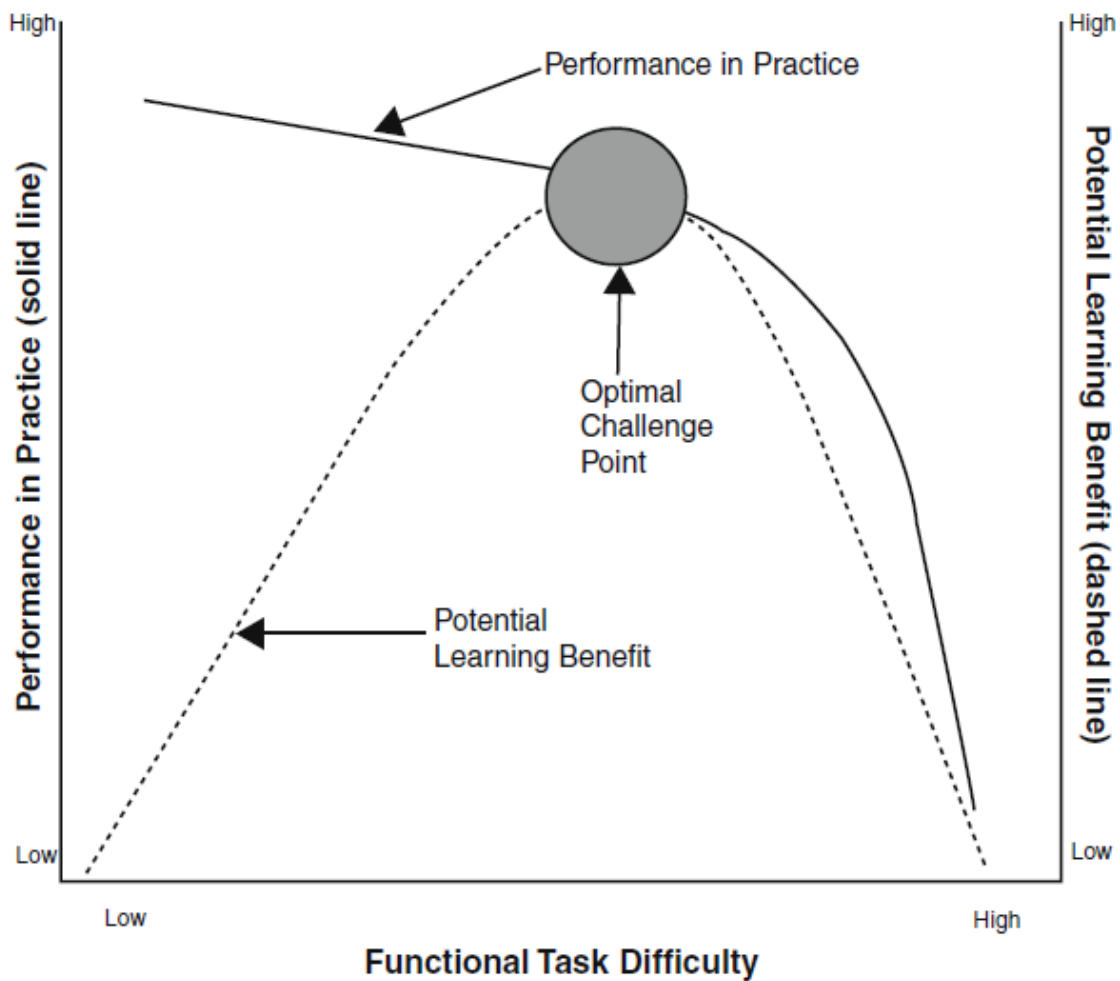
technique is performed, and the cognitive system assists players in making good decisions. When players learn golf skills, they use much more than just the motor system, players need to employ all these aspects to execute the correct movement in the correct setting. Highfield *et al.* (2019:10) refers to this process as “perceptual-sensory-motor-cognitive learning”.

According to the learning model of Welford (1976:100), a player are required to completely understand what must be learned, and the information needs to be stored momentarily until permanent registration can occur. A perceptual trace needs to be placed in the brain which will be able to identify related information in the future. This perceptual trace needs to be retained for recollection although definite alterations may be made. A situation must be adjusted so that the player has the chance to recall information. Furthermore, Martens (2012:164) agreed and mentioned that motor learning takes place in three stages namely mental, practice and the automatic stage (Martens, 2012:165). During the mental stage, a great deal of cognitive activity takes place as a player search for a mental plan of the correct technique (Martens, 2012:165). The next stage is the practice stage, this is where the correct technique is refined. During this stage coaches use different coaching methods such as variable, blocked or games approach (Cooke, 2017:25). In order for players to progress through this stage, practice sessions need to resemble the game environment (Cooke, 2017:viii). When this method is used, players may be able to perform better during competition. After the practice stage, the technique that is needed for each skill becomes more automatic. Players also free up more mental capacity, and as a result, focus on more critical elements involved in a competition.

Furthermore, Guadagnoli and Lee (2004:216) based their research on the challenge point framework. This states that learning is related to information that is available and interpretable for a player during performance. The framework suggests three important outcomes. Firstly, with a lack of information, no learning can occur. Secondly, learning will be delayed with too much or too little information. Lastly, learning will occur with an optimal amount of information. This is dependent on the skill level of the player and the difficulty of the task to be learned. This implies that as a player’s information processing abilities change, the optimal challenge point should also change (Highfield *et al.*, 2019:3, Guadagnoli and Bertram, 2014:121).

Moreover, Guadagnoli and Bertram (2014:121) used the challenge point framework for motor learning as indicated by Guadagnoli and Lee (2004:213) and applied it to golf, and makes three specific predictions. Firstly, practice performance does not necessarily indicate the amount of learning taking place. For this learning to occur successfully, coaches need to take into account the relationship between the player’s skill and task difficulty. Secondly, a challenge point is task and learner specific. This implies that the greater the player proficiency, the higher the level of challenge they can endure during practice. Lastly, the challenge point should change as the learner changes. Players who are making fewer mistakes during practice should increase the difficulty in learning efficiency. With this model learning can be improved considerably and as a result may produce a skill that is repeatable and that is able to be transferred to the pressure environment of competition. In Figure 3, Guadagnoli and Lee (2004:217), Guadagnoli and Lindquist (2007:192), Guadagnoli and Bertram (2014:123) indicates the effect of task difficulty on the potential learning benefit.

Figure 1: The optimal challenge point is indicated and the effects of learning and performance at different levels are indicated



Source: *Guadagnoli and Bertram (2014:123), Guadagnoli and Lee (2004:217), Guadagnoli and Lindquist (2007:192).*

Furthermore, players learn by making mistakes, and practicing on the golf course creates different problems with each shot. Consequently, simulating tournament conditions may enhance the possibility of learning new skills (Cooke, 2017:1). Highfield (2017:3) agrees that creating an environment conducive to learning is crucial. It is more important to provide a learning opportunity to players rather than just the objective to win (Kidman and Hanrahan, 2011:3, Cooke, 2017:1). Learning of different skills may be enhanced by incorporating variability into practice sessions (Chua *et al.*, 2019:307). These opportunities are created by means of problem-solving activities (Cooke, 2017:viii). This has cognitive stress as a result and is important for players to learn (Highfield *et al.*, 2019:2). Cognitive stress is essential for learning and occurs when players take time before they hit their next shot.

Research has indicated that expert performance is a result of years of practice and coaching, and not of talent alone (Ericsson *et al.*, 2007:2). According to Ericsson (2007:1), other fields such as chess and music have indicated that individuals do not require a high level of intelligence in order to achieve expert performance. Individuals need to practice intensively with the assistance of educated coaches and have the support of their social structures throughout their development. It was also found that the manner in which players practice was a deciding factor in achieving success (Ericsson *et al.*, 2007:1). This manner can include, coach-based and non-coach based play and activities or other sports activities. Ford *et al.* (2010:484) state that non-coach-led sports activities or play (like playing in the street or backyard) had a positive impact on technical and tactical skills as well as learning and discovery opportunities. These researchers also found that coach-led practices overemphasize drill and grid-based exercises.

According to Ericsson (2018:755), to achieve expert performance takes time, and individuals will have to practice intelligently. Various research found a significant increase in hours spent on practice between amateur and expert performance in various fields, not only sport (Ericsson, 2007:4). For example, world-class violinist accumulated 7,366 to 7,410 hours compared to good violinists that had 5,301 to 5,420 hours of practice. In order to achieve expert performance, individuals will have to engage in deliberate practice and not merely practice what they are good at but also practice their shortcomings (Williams *et al.*, 2018:654). Deliberate practice can be defined as practicing skills that are beyond your current set of skills (Ericsson *et al.*, 2007:2). Research by Ericsson *et al.* (2007:2), Cooke (2017:29), Highfield *et al.* (2019:13) has indicated that in order for individuals to achieve expert performance, they have to practice the activities that they are not competent in. According to Ericsson *et al.* (2007:2), individuals will need an educated coach to assist them in the process of deliberate practice, and as a result equip themselves to be independent of the coach.

In addition to all the above information, a player's learning is influenced by their talent, maturation level, experience, ability to pay attention, concentration, and motivation. In addition, coaches also have an influence regarding how players are taught, types of activities during practices and the focus and feedback of activities and practices. According to Martens (2012:167), the performance of players may not solely be dependent on the technical skills acquired through the number of hours they practice. Additional skills such as mental skills, physical skills, tactical skills, and communication skills need to be mastered by players to raise performance significantly. Coaches play an important role in this regard and need to evaluate the shortcomings in every aspect of a player in order for them to be successful.

Golf coaches

Youth sports have reached significant numbers at school level. Therefore, a shortage of coaches has resulted in teachers acting as coaches for the various age groups (Fung, 2003:13). The increase in the number of children participating in sport has raised the requirement for quality coaches at school level (Vargas-Tonsing, 2007:25). In the United States, as well as in South

Africa, a minimum certification has been enforced to ensure certified coaches are standing at the helm of sports programs (Kubayi *et al.*, 2016:229, Vickers and Schoenstedt, 2011:14).

The foundation of elite level sport in South Africa starts at school level (Vardhan *et al.*, 2012:19). However, many of the teachers coaching at school have not received adequate training, resulting in education programs being implemented for coaches (Sport and Recreation South Africa, 2012:554, Vardhan *et al.*, 2012:51). The South African National Coaching Framework (SANCF) was consequently developed to ensure skilled coaches at all levels of sport in the country. The development of the SANCF is beneficial to sports coaching in the country, however, research on this matter is limited in South Africa (Kubayi *et al.*, 2016:229). Improvement of coaches at all levels by means of educational programs is of paramount importance (Vargas-Tonsing, 2007:25, Vardhan *et al.*, 2012:19), and this may very well enhance the quality of inexperienced coaches (Malete and Feltz, 2000:416).

Expertise in coaching has become a popular topic. However, the quality of coaching may not be the same as that of a qualified and accredited coach (Côté and Gilbert, 2009:311), such as a PGA of SA member. The PGA of SA was founded in 1925 and is the leader in the golf coaching industry (Gunn, 2012). This association consists of 500 members who met the required playing-ability criteria and completed an academic component of three years while being employed by a fully-qualified PGA member. The program is accredited and endorsed by the PGA of Europe (Gunn, 2016) and is regarded as the leading golf qualification in Africa (Gunn, 2015). Academic programs like this are very important for all coaches to become competent (Vargas-Tonsing, 2007:25).

Good quality coaches assist players in the acceleration of the learning process (Highfield *et al.*, 2019:13), and assist players in following their instinct (Ericsson *et al.*, 2007:2), and as such being autonomous of the coach. Competent coaches often analyze players but do not give them adequate methods to solve the problems that occur in a certain skill set. This happens on a regular basis in golf instruction around the world and is not acceptable (Highfield *et al.*, 2019:12).

The question arises of how do players practice effectively to master and attain golf-specific skills, and in turn produce the results on the golf course?

Practice methods in golf

The traditional approach to coaching involves a warm-up, teaching skills in a variety of drills, and following this, coaches will end off with a practice game where these skills are applied (Martens *et al.*, 1990:152). This is almost the same as block practice that will be discussed at a later stage. According to Martens (2012:152) some of the shortcomings of this approach are the overemphasis on technical skills, overemphasis on direct instruction, mindless drills, and boredom. By practicing without any methods or purpose, players are engaging in blocked practice. According to Highfield *et al.* (2019:8), Cooke (2017:vii), blocked practice is the repetition of the same skill or task, and these skills are performed in the same conditions without any variability. This type of practice is ineffective and players may not retain the required golf skill over a long period of time and transfer these skills onto the golf course (Cooke, 2017:vii, Highfield *et al.*, 2019:8, Ericsson *et al.*, 2007:4).

However, the games approach is a more holistic approach, which involves problem-solving and guided discovery where players discover what to do in the game or competition. This does not occur by the coach telling players, but rather them experiencing it (Martens, 2012:154, Ericsson *et al.*, 2007:2). According to Martens (2012:154) the advantages of the games approach is that practices are more enjoyable and consequently more focused on assisting the players. This may yield players with understanding, who can make intelligent decisions on how to perform as well as inspire self-reflection.

Ericsson *et al.* (2007:4) illustrates this by referring to amateurs. When starting to play golf, most players focus on the basic motor skills that are needed and attempt to avoid obvious mistakes.

The practice methods at this level consists of blocked practice on a driving range, and on course play with peers at the same skill level as themselves. According to Magill and Hall (1990:282), blocked practice may be beneficial at the amateur level. When this occurs, players will display improvement in a very short space of time. As a result, players increase the amount of time practicing, and as such the motor skills needed will start to become natural, without any swing thoughts going through a player's conscious. At this stage the concentration levels of players decrease and golf becomes a social encounter, without any large increase in performance. This is where a plateau is reached and minimal improvement in performance occurs. The question is why does this happen?

Highfield *et al.* (2019:9) argues that blocked practice as mentioned above may not improve a player a great deal, an interleaved practice may be the manner in which a player can improve the plateau that is reached at this stage. Interleaved practice is where players mix a multitude of tasks in a single practice session in order to improve their learning. This assists player in retaining these skills over a long period of time and also the possibility to transfer these skills into a competitive environment. Martens (2012:154) agrees and states that variable practice is better to improve performance and decision-making skills to simulate competition like situations.

Ericsson *et al.* (2007:4) continues by explaining that when players play on a golf course they receive one chance to execute a shot, and this can be from any given environment and situation. Players don't get the chance to correct their mistakes in this scenario. However, if players had the opportunity to have more chances from that one spot on the golf course, they will receive more feedback and learn from their mistakes. Highfield *et al.* (2019:13) argues that it is essential for players to make mistakes. The reason for this is that by making mistakes, players learn from their mistakes and as a result attempt to avoid these mistakes on the golf course. Mistakes are crucial for players to learn, adapt and improve their skills.

The competitive environment that simulates situations a player may encounter on the golf course is essential for crucial (Game Like Training, 2017). According to Cooke (2017:1), (Highfield *et al.*, 2019) this environment is shaped by four concepts:

- The first concept is to recreate. This refers to the environment that is recreated to as close as possible to conditions that a player may encounter on the course. Traditional practice

has always been repetitions of the same club on a flat lie. However, according to Cooke (2017:1), this method does not enhance learning. By creating an environment that resembles the golf course players will play on, their learning will accelerate. This can be done by making players walk between shots, have different lies for each shot and never hit the same club twice.

- The second concept that Cooke (2017:5) refers to is simulation, which is closely connected to recreation. however, a goal and outcome are attached to this section. Create challenges, create a name for each challenge, clarify what is expected of the player and keep a scorecard.
- The following concept is regulate. In this section, a player has developed goals and strategies that are then assembled to achieve these goals to finally reflect on the results. This process is repeated to create more goals and strategies.
- Cooke (2017:21) states that chunking is the final concept. This is where information is broken down by a player and can be presented to him in any situation. Due to the fact that the environment a player may encounter on the golf course is recreated, a player can gather information in any situation on the golf course and react appropriately.

Players need to practice in order to learn, not to see results. This might sound peculiar, however, Highfield *et al.* (2019:7) posits that players need to focus on the process and not on the end result. OSVEA (Observation, Selection, Visualisation, Execution, and Acceptance), is a method that is used by a number of professional players to assist them in focussing on the process and not on the result (Highfield, 2017:12). It is crucial not to break this process, as Jordan Spieth explained, and admitted that this happened to him when he lost the 2016 Masters tournament after he had a healthy lead. Spieth had hit his ball in the water at a crucial stage in the tournament (Highfield, 2018).

Acceptance is the last step in this process. In order to achieve the last step of OSVEA a player needs to understand their own thought patterns and consequently accept the outcome of a particular shot (Highfield, 2017:83). This is done by identifying three positive aspects for every negative one. Players then use this phase of the process to learn from their mistakes and analyse where they can improve. According to Highfield (2017:84), the players are required to write this on paper in order for them to understand the importance of their thought processes.

Creating a competitive environment for players is crucial, and adding to this, equip players with adequate methods in order to overcome these pressure situations. With all the above-mentioned factors the aim of this study was to explore the perceptions of former and current Sunshine Tour players, Professional Golfers' Association of South Africa (PGA of SA) members, PGA of SA coaches and/or golf administrators regarding effective practice methods in golf.

Methodology

In order for the researcher to answer the research questions and reach the objectives, this study utilised a qualitative research approach within the social constructionism paradigm, to gather,

interpret and investigate the data. In order to investigate developing themes, this research methodology included an inductive approach to collecting and analysing data (Durrheim, 2006:47).

This research design was interpretative of nature and the aim of the study was to explore how and with which methods participants feel players can be successful at the highest level.

Semi-structured interviews were utilized during the data collection process. This method was used due to the fact that the participants are experts in the field and may provide the researcher with data-rich information. The researcher made use of probes in order to get participants to elaborate on certain topics. This provided the researcher with additional data that can be used in the study.

The interview questions that were used were adapted from studies by Jorlén (2008:26) and Hayman *et al.* (2014:963). The researcher has extensive knowledge of the research subject, and as a result the questions used by Hayman *et al.* (2014:963) and Jorlén (2008:26) guided the data collection process. The principles of social constructionism and the ecological approach provided by Bronfenbrenner (1986:723) were kept in mind throughout the interviews.

The questions posed to discuss the following:

- a) Participation in golf as a junior golfer.
- b) Recognise the aspects the player felt was needed for success.
- c) Identify the importance psychology has on the success of a player.
- d) Identification of methods used to effectively manage the player's career.

The data collection continued until a stage of data saturation was achieved. Data saturation determines the sample size of a majority of qualitative research studies (Mason, 2010:2). Groenewald (2004:46) states that this is where there is no new data that emerges from the interviews.

Themes were identified that indicated patterns that emerged during the interview process. This method is defined by Braun and Clarke (2006:78) as a qualitative method of identifying themes during the data collection. According to Braun and Clarke (2006:78), this method is used on a regular basis in qualitative research and functions successfully when used in relationship with a social constructionist paradigm. This method enables the researcher to arrange the data into smaller units (Corbin and Strauss, 2015:167). This approach allows the researcher to reflect and influence the construction of categories and themes that are captured during the data collection process.

The study aimed to explore the perceptions of former or current Sunshine Tour players, PGA of SA members, PGA of SA teaching professionals and/or golf administrators. Specifically, perceptions of the correct transition strategies for junior golf players to achieve success at a professional level. A sample size of 17 participants took part in the research study. This consisted

of 12 PGA teaching professionals, three former or current Sunshine Tour players, and two golf administrators. This study was undertaken in the North-West and Gauteng provinces of South Africa at the location of the participants. The majority of the participants chose the golf course or driving range facility where they are employed as their chosen location for the interviews, with the exception of one participant that chose to conduct the interview at his personal residence.

The participants were selected for the research study by utilising the following sampling criteria.

- Coaches who have completed the three-year PGA diploma and qualified successfully.
- Participants who are actively involved in the golf industry.
- Players who have competed in the Sunshine Tour.
- Players who are currently competing on the Sunshine Tour.

Results

Participants indicated that several aspects influence the performance of players and that it is essential to pay attention to each one. The results were taken from the experience by the participants and also from world-class players that they have assisted in the golf industry. Consequently, the results provided is the reality that former and current Sunshine Tour players, PGA of SA members, PGA of SA teaching professionals and golf administrators experience. This was established through semi-structured interviews, and then analysis of these interviews. This section discusses the results and how this connects with the current body of knowledge.

Practice methods

Participants indicated that players need to practice in a constructive manner. It was stated that standing on a driving range and hitting countless balls one after the other may not produce adequate results. Participants also mentioned that even if players have the ability to execute the required golf technique, this still has to be tested in the game environment such as a golf course.

Participant 6 [87:12] indicated that by merely hitting balls may not produce the required results.

"...just standing there hitting balls until your hands bleed is not gonna necessarily make you a great player."

Participant 8 [90:15] stated that the technique is not the only aspect needed to deliver great results.

"So they have to hit the ball great to play well. I'm like, you don't...how many guys hit the ball really average and play great, because they know how to get the ball in the hole."

Participant 8 [90:16] continued by indicating that players should not only focus on the technical aspects of a golf swing.

“So for me from a teaching point of few, I’m going away from the golf swing a lot to try and just make guys do the simple things well. Like move properly, mmm not get caught up with their golf swing so that they can focus more mentally on what they going to do from a planning perspective, and they must play more, they must play much golf and learn how to score.”

According to Highfield *et al.* (2019:8), golf players need to be able to master certain motor skills and in order for the player to retain these skills interleaving needs to occur. Practice sessions such as this form a correlation between the cognitive and physical aspects, which in turn may have long term learning of golf skills as a result. Magill and Hall (1990:282) stated that blocked practice provided the most suitable challenge for beginner players and random or interleaved practice provided more suitable challenges for more experienced players.

Coaches need to move away from working on the individual and create a productive environment (Highfield, 2017:4). A key concept is the term “growth mindset”, this refers to the understanding that players should not work towards results, but focus on improvement (Highfield, 2017:85). By creating pressure situations, players will learn how to execute the needed skills in the competition environment.

Pressure situations

Recreating pressure situations were noted by many participants as an important aspect in order to develop adequate mental attributes required for professional golf. Participants stated that pressure situations can be created by means of a point system and an outcome at the end of the session. According to one participant creating difficulty, such as hitting out of divots can assist a player when this situation occurs on the golf course.

Participant 11 [81:19] confirmed the creating of a pressure environment and gives an example:

So it’s just trying to recreate what they going to do out, you know on the golf course I mean things from you know getting them to mmm try to recreate difficult lies that they have you know hitting shots out of divots.

Participant 8 [90:24] explained that in putting, one can create a pressure environment:

“If they struggle under pressure with putting, well you need to create an environment to maybe try and help them understand that.”

Participant 11 [81:12] indicated that players need attempt to simulate pressure situations encountered in the competition environment

“too many amateur golfers spend so much time practicing but not testing themselves amongst massive amount of pressure“

Participant 7 [89:18] stated that every skill needs to be practiced, however, it is crucial to add pressure to the training sessions.

"But it is not always necessary to do just that, you have to do swing drills, you have to do everything, you have to do chipping, but you can also, you have to practice under pressure."

According to Cooke (2017:1), by creating an environment that resembles the golf course players will play on, their learning will accelerate. Guadagnoli and Bertram (2014:126) noted that if appropriate challenges are set it enhances practice time, and as a result enhances learning that is transferred successfully in pressure situations.

Participant 6 [87:2] noted that creating the opportunity for players to play competitive golf is extremely important.

"I think the sort of feeder tour that has come on board with the IGT that has really helped too, its allowed amateur golfers to play competitive golf regularly..."

Participant 6 [87:2] continued by stating that players need to play on different golf courses and that gaining that experience is crucial.

"...giving them the funding and experience and opportunity to go play overseas to get that type of experience playing in those events, like British amateur and those events in the UK..."

Participant 12 [83:4] agreed that players need to play on the golf course and get used to competition golf.

"...getting a taste of that competition golf..."

Participant 7 [89:7] indicated that the process to become professional gets easier when players start playing tournaments from a young age.

"...it just makes it easier when you play tournaments from a young age, and win competitions, and selected for teams and then from there you get more exposure..."

Creating a challenge point with consequences involved was mentioned by participants as a crucial part of expert performance. One participant mentioned that practicing different swing drills is also needed, however players need to be challenged.

Participant 11 [81:12] explained that creating a challenge with an added consequence recreates tournament golf

"amounts of points that they need to do ah or need to get whether its base around the amount of time you know that the guys are spending so they have to be able to pass the test before they can you know either move to the next thing or leave or whatever the case is, so its its just trying to recreate what they gonna do out you know on the golf course."

Guadagnoli and Bertram (2014:125) used the challenge point framework on golf and made several suggestions for practice of high and low handicaps and typical problems that players encounter and how to solve them. They suggest that the challenge should also be adjusted as the player improve and that depends on the ability of the player to utilise the information available to him or her.

Conclusion

Every golfer wants to improve their golf. However, a large number of golfers around the world are practicing in an incorrect manner (Highfield *et al.*, 2019:1). At the start of this study the question was asked, “why can’t a large number of golfers transfer their golf skills from the driving range to the golf course?”

This study concluded that blocked practice may not be the most effective manner for players to reach their full potential. Amateur players may make use of blocked practice, as they need to master the basic skills needed to play golf. These players will have to practice the acquired skills for a long time before mastering it.

On the other hand, when players have mastered the basic golf skills, blocked practice may not be an effective method for them to improve. The reason for this is that when players are competing on the golf course in a competitive environment, they are required to produce a different skillset with every shot. To add to this, players need to produce these skills in varying conditions, different environments and under pressure. When players employ a blocked practice method, they do not introduce these different aspects to a practice session and are unable to perform under pressure in competitions. Players with a high skill level may need to practice in an interleaved manner. This entails that players attempt to emulate the situations and conditions they will encounter on the golf course and introduce them in their practice sessions.

The reason for this is that players only improve if they learn, and to be able to learn, players need to experience cognitive stress (Highfield *et al.*, 2019:2). Cognitive stress occurs when players employ spacing, variability, and challenge to practice sessions. Highfield *et al.* (2019:2) gives the following methods that may be utilized by coaches and players in order to improve their performance:

The first method is spacing. This entails that players need to lengthen the time they take between shots. The reason for this is that the brain then needs to recall the motor pattern that was executed in the previous rep. As a result, learning occurs as cognitive stress in the brain is created (Highfield *et al.*, 2019:2). Guadagnoli and Bertram (2014:125) suggest that skilled players must not hit more than 5 balls before taking a break. Spacing is a regular occurrence, due to the fact that when players are playing on the golf course, they have to walk to their ball after each shot.

The second method that Highfield *et al.* (2019:2) refers to is variability. This is an essential component when players are learning new skills (Highfield *et al.*, 2019:2). Players may need to change their club, lie and target on a regular basis during a practice session in order to enhance learning. Chua *et al.* (2019:307) agrees and also argues that by creating variability in practice sessions skills may be learned in an advanced manner.

The last method highlighted by Highfield *et al.* (2019:3) is challenge point. This entails that players employ space and variability in their practice sessions, as a result the challenge point will also rise (Highfield *et al.*, 2019:3). Players need to have a challenge as cognitive stress occurs as a result of it. In turn with a challenge, there need to be consequences attached to the challenge. This is crucial as this creates the pressure situation that players are constantly under in a competitive environment. In addition, Guadagnoli and Bertram (2014:127) argues that adding variability and challenge to practices employs cognitive elements that are essential to perform on the course. This in return, prepares players for when they are required to hit a critical shot in competition. During the research study, the researcher was actively reflecting on the process followed. As a result, the following limitations were identified.

Limitations

The sample size could have been evenly distributed between the different types of participants, teaching professionals, administrators, and players. If the researcher expanded the sample selection to different provinces in South Africa different data may have presented itself.

The majority of the sample selection was males, with only one female being interviewed. Gender differences could have provided different data. The research study may have been different if gender was taken into account.

Interviews were the only method of data collection and completed only once with each participant. Adding another form of data collection such as questionnaires could have been beneficial to the research study.

Motor learning is a broad and complex process in human learning, this article only covered certain aspects involved. However, the purpose of this article was not to look at motor learning in detail, but to focus on the practice methods in sport.

Future research

During this research study effective practice methods were identified and analysed to achieve expert performance. However, other factors may play a role in the performance of players such as the lifestyle of a professional golfer. Numerous participants emphasised the effect that the lifestyle of a professional golfer has on performance. However, further research is required to gain a better perspective on the factors involved.

The relationship between players and coaches emerged during this research study, however, this specific topic could be researched in more detail.

The influence of golf equipment on performance was not investigated and could form an influential part of player performance. Research areas such as the influence of top branded golf equipment vs. entry-level equipment on performance could be investigated, and identify any psychological factors involved. This requires further research in order to examine the influence equipment will have on a player.

Technology in golf plays a significant role in the preparation of players and need to be investigated in more detail. Players often become technical in their preparation and this is often influenced by the available technology. Technology such as Flightscope and Trackman may influence a player significantly as the needed mental skills are not active.

Summary

With the above-mentioned information, coaches need to use various techniques like spacing, variability, interleaved practice as well as setting a challenge point for each activity or coaching session. If coaches incorporate these aspects in their coaching, it may very well enhance the learning of players and will result in better performance in competitions. As a result, players will learn to transfer these skills and adapt successfully to any environment presented in a competition setting, such as a golf course. The results of this study can assist coaches in employing the correct practice methods, and as a result prepare golf players for professional level.

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