ANALYSIS OF COGNITIVE COACHING AND IT'S IMPACT ON THE PERFORMANCE OF TENNIS PLAYERS

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ABSTRACT:

The purpose of this study was to examine the level of impact of cognitive coaching on tennis player's performance and also to figure out how cognitive coaching impacts the performance of tennis players. In this study, eighty male national tennis players were randomly selected from Punjab lawn tennis coaching center. Three instruments consciousness scale efficacy scale and performance scale were used to collect data. The reliability analysis of the three scales were greater than 0.5, indicating good reliability. Regression model was developed to examine the impact of consciousness and efficacy on a tennis player's performance. Consciousness and efficacy had positive and significant ($p<0.05$) while experience had positive and insignificant ($p>0.05$) impact on tennis players' performance. The result of the regression analysis shows that variable of experience is insignificant i.e., it did not cause any variation in dependent variable. The variable of consciousness scale and efficacy scale are significant as their values are greater than 2, and their p-value is less than 0.05 which is evidence of their significance. It was recommended that the players should be encouraged by their coaches to increase their confidence; furthermore, their participation in cognitive coaching will enable them to perform confidently. It will also help them to take control of their skills; thereby resulting in improved performance.

Key Words: *cognitive coaching, consciousness, self-efficacy, tennis, performance.*

Introduction:

Winning is one of the primary goals of professional sports, yet winning demands sustained high-level performance. High performance necessitates rigorous, ongoing, and successful training. However, in today's competitive sports environment,

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physical training alone cannot guarantee high level performance, much alone consistency. As the concept of sports performance has evolved, it has become progressively vital to combine the mental and physical components of performance. Usually, coaches have given minimal attention to the cognitive parts of sports performance, while players and coaches have focused solely on the physical aspects of the performance.[1]

Though, researches have shown that the interface between physiological, biomechanical, and peripheral and central nervous system function to movement coordination is mediated by various aspects of psychological participation. Training in mental skills has been found as an effective technique for increasing the psychological component of physical activity. Mental skills training arose mostly from the athlete's desire to learn more about their own mental lives in order to have some control over effective passage through various psychological states of performance. A player should visualize himself as a winner and keep going instead of displaying negative actions. Cognitive coaching, when applied to the sports field can be defined as a technique or a methodology that facilitates a process of training and personnel training, among the players and a trainer by allowing both to improve their self-knowledge.[2]

Accompanying this relationship between the trainer and the player is important to note that how both must assume the role of apprentices and personal performance. Physical capacity, skill level, or biomechanical efficiency do not alter significantly throughout a competition or between two consecutive tournaments. Athletes do not lose or gain stamina, ability, talent, or speed over the course of a single day, week, month, or even years.[3]

The only thing that changes is psychological control or mindset. When an athlete loses or gains momentum, it is due to psychological and emotional reasons. According to research on the performance of teachers and other professions, such fluctuations in

psychological control can be avoided by increasing cognitive skills through cognitive coaching.[4]

Cognitive Coaching is a coaching style that capitalises on and develops cognitive processes. It is a way of thinking and operating that promotes individuals and groups to shape and reorganise their thinking and problem-solving abilities. The idea of cognitive coaching is that metacognition–being aware of one's own mental processes–improves learning independence. Cognitive coaching fosters adaptability and confidence in problem-solving by providing personal insights into the learner's own mental processes. It also boosts self-esteem and pride.[5]

However, despite such great importance of cognitive coaching, there have been very few studies done on the impact of cognitive coaching on athletes' performance and no studies have been done particularly regarding the impact of cognitive coaching on tennis players' performance. Considering the strong merits of cognitive coaching and the lack of research regarding its impact on tennis players' performance, the researcher decided to study, in great detail, the impacts of cognitive coaching on tennis players' performance.[6]

Cognition: Acquiring information and understanding through cognition, experience, and the senses is a mental action or process. It refers to the mental processes involved in learning and understanding, such as thinking, knowing, remembering, judging, and problem solving. These are higher-level brain activities that include language, imagination, perception, and planning. The scientific word for mental processes is cognition. It relates to humans' perception, acquisition, and memory of information.[7]

Cognitive Coaching: Cognitive coaching is founded on the premise that metacognition–or being aware of one's own thought processes–improves learning independence. Cognitive coaching develops flexible, confident problem-solving abilities by offering

personal insights into the learner's own thought processes. It also promotes self-efficacy and pride.[8]

Training for sports has existed since the beginning of time. Training methods have evolved over time, and athletes, particularly top athletes, are always on the cutting edge of new training ideas and technologies. Weight training, intervals, plyometric, and, of course, repetition of the actual motor processes done in the sport itself are still used. However, as athletic rivalry has progressed, training has become more inventive. To enhance balance, football coaches take their players to yoga and ballet courses. Elite marathoners train solely in high altitude settings and have their VO2 max checked on a regular basis. VO2 max is also known as maximum oxygen intake, which is a factor that determines the capacity of an athlete to perform exercise and also link it to aerobic endurance. Cryotherapy, a treatment involving intense cold, is also used to reduce inflammation during training recovery. Kobe Bryant travels to Germany on a regular basis to undergo an experimental technique known as the Regenokine technique.[9]

In sports psychology, sophisticated strategies are employed to assist players build more confidence and remain cool in high-pressure circumstances. Good training involves recognising the skills required to perform at a high level and then designing methods to increase those skills.[10] We have already found techniques to boost numerous athletic attributes, including but not limited to cardiovascular capacity, strength, speed, balance, flexibility, sport-specific ability, motor control, healing and recovery capacity, and yes, even mental intangibles like confidence and resolve.[11]

Training in mental skills has been found as an effective technique for increasing the psychological component of physical activity. Mental skills training arose mostly from the athlete's desire to learn more about their own mental lives in order to have some

control over effective passage through various psychological states of performance. 12 Despite significant overlap, most ways for increasing mental capacities in task performance may be split into two basic approaches: cognitive and somatic. At the centre of both systems is the person's objective and incentive to acquire self-mastery, that is, to govern their specific psychological reality.[13]

The terminology "coaching" can refer to a form of mentorship (for example, sports coaching), and this interpretation of the term has also been employed in sectors such as education and the workplace, creating misunderstanding about what coaching is. While a consensus arose distinguishing mentoring (instructional) from coaching (non-directive), the lines are not well defined. Thus, whereas some coaching systems strongly prohibit the coach from offering counsel, others nevertheless see the coach as a guide.[14] Coaches are often defined as persons who give knowledge and counsel to others. Coaching, on the other hand, is defined as the process of improving the potential of the one being coached to become more and more high performing on his/her own by being more conscious of their ideas and behaviours. In other words, Cognitive Coaching empowers people to change their ability to change. A stagecoach metaphor is one that explains how a coach transports a valuable person from where she is to where she wants to go.[15]

The individual being coached, not the coach, analyses what is good or bad, suitable or inappropriate, effective or unsuccessful about his or her work in Cognitive Coaching. This is an effective strategy for improving performance and creating learning organisations. The following four basic concepts underpin Cognitive Coaching: 1. All behaviour is the result of thought and perception. 2. Teaching is a continuous and decision-making process. 3. Learning something new necessitates involvement and a shift in perspective. 4. Cognitive development in humans continues.

A coach is a mediator who stands between a person and his thoughts to assist him become more conscious of what is going on within his brain. It is not enough for a person to act in a specific manner; what matters is the thought that goes on behind the behaviour.[16] A mediator's function is heavily reliant on trust and connection with the individual being taught. The principle at the foundation of Cognitive Coaching is that everyone of us has resources that allow us to develop and change from inside. These resources (also known as capabilities or energy sources) are referred to as "States of Mind" by Costa and Garmston. The coach mediates the States of Mind, helping the person to use her inner resources more effectively. There are five different mental states.[17]

Rationale of the Study: The purpose of this study was to find out the impact and effectiveness of cognitive coaching on tennis player performance. There has been very little research on the impacts of cognitive coaching on performance of athletes while there has been nearly no research done on the impacts of cognitive coaching particularly on tennis players. The outcomes of this study will help tennis coaches, and the related decision makers realize the impacts and importance of cognitive coaching in the game of tennis and will help them devise well-planned and all-encompassing training programs with the integration of cognitive coaching for tennis players to enhance their performance. With the help of this study, the coaches as well as the tennis players will be able to understand the true worth of cognitive coaching and how it affects their performance. It is important for an individual or a player to be aware of his or her qualities and weaknesses, as it will help in learning and development. Cognitive coaching is a process that specifically helps the players in understanding the logics behind the practices and activities in which they are involved during the fieldwork. It helps the players as well as the trainer in development of a cognitive map that will facilitate them during a match. The questions asked by the players from the coach helps them in

strengthening of their cognitive plan that is often consciously or partly consciously developed. However, as it is evident from the information gathered from previous studies on cognitive coaching, there has not been any research done particularly on the impact of cognitive coaching on tennis players' performance. For that reason, the researcher considered it necessary to conduct research on the impacts of this important coaching method particularly on tennis players' performance. The current study therefore will examine in detail, the impacts of cognitive coaching on tennis players' performance. The outcomes of the study will help change the prevalent ineffective coaching styles, not only in Pakistan, but world over, in the field of tennis where most coaches emphasize on physical training and greatly ignore the importance of psychological training, through this research, the researcher will explore the level of impact of cognitive coaching on tennis player's performance and the way cognitive coaching impacts the performance of tennis player by testing the following hypothesis.[18]

METHODOLOGY

The research was quantitative in nature. The relationship between consciousness, efficacy and performance has been studied in the research. Former two are independent variables while the latter is a dependent variable. A questionnaire is filled in by the sample audience. Questions are answered on the basis of 5 ordinal options ranging from "Strongly Disagree" to "Strongly Agree". Questions are divided into three categories belonging to each of the factors. Total 80 respondents who fulfil the criteria (National tennis Players from Lahore district) are included in this study. I had to get data of 80 players out of which 76 respondents gave me the correct data but 4 players did not give me the complete information. That is why data of 76 players included in this research.

DATE COLLECTION PROCEDURE

Punjab lawn tennis academy and Model town sports club K-21 Lahore were contacted and permission was obtained from the

authorities. They were thoroughly briefed about the research plan, and were reassured of the confidentiality of the information collected from the players. The test booklet including scales of consciousness, efficacy and efficacy along with demographic sheet were administered to the respondents. They are requested to read each statement carefully and respond honestly as their best knowledge. The filled questionnaires are coded and complied in SPSS.20 software. Different statistical tools are applied to draw inferences on the basis of sampled data. Some specific assumptions related to the applied statistical tools are assumed in this study and α=0.05 (level of significance) is considered for testing of research hypothesis.

RESULTS

Table No. 1: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4206.166	3	1402.055	29.430	.000
	Residual	3620.634	76	47.640		
	Total	7826.800	79			

In the above table Regression analysis is performed. The explanatory variable is performance scale while the independent variables are experience, consciousness scale and efficacy scale respectively. As the p-value (.000) is less than α=0.05 so we can conclude that overall regression is significant. The F test statistic value is 29.430 of the regression. Table No. 5 shows the outcomes of the ANOVA test. The regression depends upon the dependent as well as independent variables. The explanatory factors are performance scale and the independent factor is experience, consciousness scale and efficacy scale respectively. The results of regression model shows that it has sum of squares is 4206.166 along with 3 degree of freedom. When sum of squares is divided on the degree of freedom, the value of mean sum of square is found that is 1402.55. Likewise, is in the case of residual. When values of

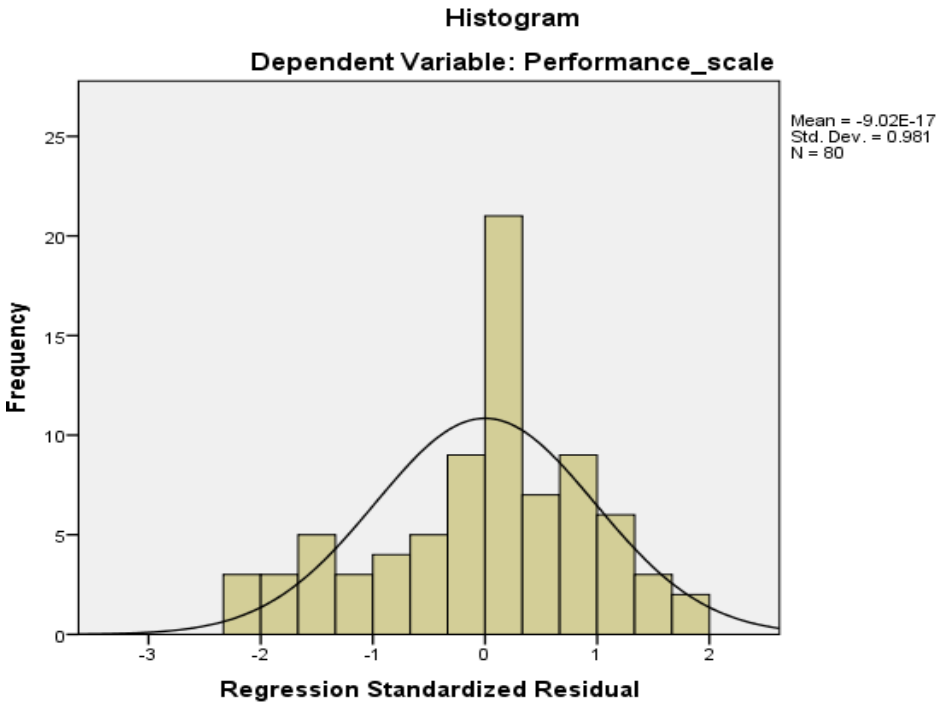
regression mean square if divide on the value of residual mean square research found the value of F-Stat i.e., 29.430 in this model. The value of F-Stat represents the overall significance of the model under study, if the value of F-Stat is equal or greater than 2 or the p-values of F-Stat is less than 0.05 we reject the null hypothesis. That shows the model is significant. Consequently, the results of researcher's analysis reject that null hypothesis and accepting the alternative one. Therefore, the model is significant.

Table No. 2: Variables of Regression

Model	Standardized Coefficients Beta	T	Sig.	VIF
(Constant)		4.101	.000	
Consciousness scale	.256	3.009	.004	1.186
Efficacy scale	.587	6.807	.000	1.221
Experience	.035	.439	.662	1.032

Table No. 2 shows the results of Regression Analysis. The dependent variable is performance scale and the independent variables are experience, consciousness scale and efficacy scale respectively in the regression model under study. The result of the regression analysis shows that variable of experience is insignificant it did not cause any variation in dependent variable. The variable of consciousness scale and efficacy scale are significant as it values is greater than 2, and its p-value is less than 0.05 that is the evidence of its significance. This variable has significant and positive relation with the dependent variable. It means that one unit increase in the consciousness scale leads to 0.256 unit increase in the dependent variables. Likewise, one unit increase in the efficacy scale leads to 0.587 unit increase in the dependent the columns of tolerance and VIF used to check the presence of

multicollinearity. All the variables have VIF less than 5 so it provides evidence of no problem of multicollinearity.



This Figure shows that in the Regression model under study, dependent variable must be distributed normally. In the above graph of histogram, we can see that the distribution is approximately normal as in real life problems it is difficult to obtain exactly normal distribution especially in social sciences.

DISCUSSION

The research aimed at finding answers to two basic questions. First question focused on different ways in which Cognitive Coaching had an impact on tennis players. Second question focused on the degree of this impact. Results of the questionnaire tend to answer these questions. It has been found that Cognitive Coaching has enabled players to perform better in a

number of ways. Initially the players were analysed on the scale of consciousness and efficacy. Consciousness is considered to be an important decision-making aspect in sports. Some experts believe that it plays a vital role in the learning and growth process of inexperienced players only[19] while experienced players usually are skilled with their techniques and tend to stick to them without bringing about major changes in playing style.[20] On the other hand, their counterparts suggest that experienced players also make use of their cognitive skills as much as novices do. Their growth process does not become stagnant, as learning is an on-going process. Previous studies have indicated that cognitive coaching has a profound impact on the overall performance of an athlete; therefore, it should be considered on top priority by the coaches to bring positive change has disclosed in his study that Tennis Coaches should keep on enhancing their skills and capabilities through educational processes so that they would be able to better guide and accommodate the individuals into a team. In order to enhance cognitive coaching, the coaches should take practical trainings from qualified trainers, so that they would be able to bring the required level of performance among the team members in all terms such as psychological, physical and teamwork etc.[21] Found self-efficacy in school-level athletes to be greater than that in state level athletes. Their results are supported by a prior research[22] who advocated that the level of efficacy and risk-taking ability decreases as the player becomes experienced and well known. This results in resistance towards difficult tasks and facing new challenges. These two invariable formed the basis of, variable of the research, player performance. It refers to the degree to which a player performs and yields positive results. A general similarity trend was found to appear between the level of consciousness and efficacy in players in relation to their performance. Regression analysis has shown that player performance is highly influenced by the consciousness and efficacy of the individual. Greater consciousness and efficacy lead to balanced decisions, improved performance, and better cognitive skills. However, the degree of

impact made by the former two could not be truly assessed. This seems to be the limitation of the present study, which needs to be, addressed in future research.

Tennis is a demanding game that asks for both physical fitness and mental responsiveness. The player has to think and deliver in a limited period of time and needs to deliver a different shot each time. The techniques along with timings form the essence of this sport. Hegazy in 2012 suggests that if a stroke is learnt incorrectly, it becomes a challenging task to reverse the process and learn the correct technique. Thus, tennis players require greater precision and skill as compared to other games. It thus becomes crucial that the correct technique is learnt with the combination of speed and precision to master the strokes. Thus, Cognitive Behaviour Therapy (CBT) or a Mental Training Program (MTP) should be used in conjunction with the training programs in tennis players to ensure that their physical fitness is accompanied by logical thinking and strong decision-making skills to produce effective results.

Tutoring techniques, such as listening, thinking, information generation, pattern observation, creation of scenarios for the individual to learn to modify their behaviour are all ways that are used by the coaches as well as the psychologists in almost all the fields. All these techniques are an effective part of cognitive coaching, which is clear from the result analysis of the study.

CONCLUSION

A total of 80 respondents filled in the research questionnaire. Results revealed that player performance is highly dependent on cognitive skill development and it stands to be an important aspect of growth of a player in addition to general mortar or physical training. Cognitive skills affect the metabolism, nervous system, cardiac activity and critical thinking skills. Cognitive coaching is generally carried off as peer teaching methodology by trainers to

infuse reflective learning skills in the players. Professional tennis players worldwide use various methods such routine trainings, relaxation sessions and self-talk to improve their cognitive abilities. It is a highly accepted belief that cognitive skills and physical training go hand in hand for growth of players.[23] The study was able to critically analyse many popular believes related to cognitive coaching. It gathered evidence to show whether cognitive coaching was as efficient in experienced sportsmen as it was in juniors. It also studies the impact and nature of efficacy in experienced players as opposed to new ones. However, there are few limitations of this study. It does establish the result that consciousness and efficacy play vital role in better performance of the player.

Performance and consciousness of the players can get improved to a major extent through cognitive coaching, which is clear from the result analysis conducted through reliability statistics of scales; however, low reliability was observed in the efficacy scale. Therefore, it can be concluded that the performance level of tennis players could be managed with effective level of cognitive coaching.

REFERENCES:

Matosic, D., Cox, A. E., & Amorose, A. J. (2014). Scholarship status, controlling coaching behavior, and intrinsic motivation in collegiate swimmers: A test of cognitive evaluation theory. Sport, Exercise, and Performance Psychology, 3(1), 1.

Di Carlo, F. (2015). Finishing the Match: A Skill Which Requires Specific Coaching for Female Tennis Players. Journal of Sports Science, 3, 305-308.

Theeboom, T., Beersma, B. and van Vianen, A.E., 2014. Does coaching work? A meta-analysis on the effects of coaching on individual level outcomes in an organizational context. The Journal of Positive Psychology, 9(1), pp.1-18

Pill, S., Hewitt, M., & Edwards, K. (2016). EXPLORING TENNIS COACHES'INSIGHTS IN RELATION TO THEIR TEACHING STYLES. Sport and Health, 30.

Matosic, D., Cox, A. E., & Amorose, A. J. (2014). Scholarship status, controlling coaching behavior, and intrinsic motivation in collegiate swimmers: A test of cognitive evaluation theory. Sport, Exercise, and Performance Psychology, 3(1), 1.

Pitsoe, V. J., & Maila, W. M. (2012). Towards constructivist teacher professional development. Journal of social sciences, 8(3), 318.

Tuite, Mick F., Gemma L. Staniforth, and Brian S. Cox. "[PSI+] turns 50." Prion 9, no. 5 (2015): 318-332.

Matosic, D., Cox, A. E., & Amorose, A. J. (2014). Scholarship status, controlling coaching behavior, and intrinsic motivation in collegiate swimmers: A test of cognitive evaluation theory. Sport, Exercise, and Performance Psychology, 3(1), 1.

Neenan, M., & Palmer, S. (Eds.). (2013). Cognitive behavioural coaching in practice: An evidence based approach. Routledge.

Krasny-Pacini, A., Limond, J., Evans, J., Hiebel, J., Bendjelida, K., & Chevignard, M. (2014). Context-sensitive goal management training for everyday executive dysfunction in children after severe traumatic brain injury. The Journal of head trauma rehabilitation, 29(5), E49-E64.

Good, D., Yeganeh, B., & Yeganeh, R. (2013). Cognitive behavioural executive coaching. Research in Organizational Change and Development, 21, 175-200.

Pitsoe, V. J., & Maila, W. M. (2012). Towards constructivist teacher professional development. Journal of social sciences, 8(3), 318.

Whelan, J. P. (1991). Behaviour Therapy. Volume 22, Issue 3, Summer 1991, Pages 307–327

Carter, Alison. (2001). Executive coaching: Inspiring performance at work: Institute for Employment Studies.

Grant, Anthony M, & Stober, Dianne R. (2006). Evidence based coaching handbook: putting best practices to work for your clients: Wiley.

Overview of Cognitive Coaching. (2016). Retrieved 26th March, 2016, from http://cerra.org/mentortraining/cognitivecoaching.aspx

Neenan, M., & Dryden, W. (2013). Life coaching: A cognitive behavioural approach. Routledge.

Mamassis, G. and Doganis, G. (2004). The Effects of a Mental Training Program on Juniors Pre-Competitive Anxiety, Self-Confidence, and Tennis Performance. Journal of Applied Sport Psychology. Volume 16, 2004 - Issue 2.

Hegazy, K., Sherif, A. M., & Houta, S. S. (2015). The effect of mental training on motor performance of tennis and field hockey strokes in novice players. Advances in Physical Education, 02, (2015)77.

Fehr, Collin M. "Intercollegiate Tennis Coaches' Perceptions of and Preferences for Continuing Education." (2013).

Montaner J, Mendioroz M, Delgado P, García-Berrocoso T, Giralt D, Merino C, Ribó M, Rosell A, Penalba A, Fernández-Cadenas I, Romero F. Differentiating ischemic from hemorrhagic stroke using plasma biomarkers: the S100B/RAGE pathway. Journal of proteomics. 2012 Aug 3;75(15):4758-65.

Holding, R., & Meir, R. (2014). Applying Biomechanical Research to Coaching Instruction of Stepping Movements in Rugby Football. Strength & Conditioning Journal 36.3 (2014): 8-12.

Hegazy, K., Sherif, A. M., & Houta, S. S. (2015). The effect of mental training on motor performance of tennis and field hockey strokes in novice players. Advances in Physical Education, 02, (2015)77.