Effects of Multitasking on the Performance of a Team Captain at an Elite Level in Sports

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Abstract

Background: Team captains have been observed to have scored fewer goals compared to other players in a team. One of the many underlying causes resulting in this has been identified as multitasking because captains have multiple activities that they need to carry out both on and off field. Studies have argued that the roles and responsibilities of a team captain is their major source of anxiety and frustration and multitasking also builds up anxiety as a general symptom. The aim of this analysis was intended towards determining whether multitasking is one of the factors that affect an athlete’s performance.

Methods: The methodology consisted of an archival study through which past records and facts related to roles and responsibilities of team captains were extracted and a detailed analysis was conducted to determine whether the hypothesis is applicable.

Conclusion: Results suggest that multitasking is a myth since two or more tasks cannot be performed simultaneously. Even while playing on the field, a team captain switches from one task to another and it entirely depends upon him to perceive the activities as single-tasking or multitasking, and his performance is enhanced when he perceives those activities as multitasking.

Keywords: Cognitive process, Concentration, Elite Sport, Multitasking


1. Introduction:

1.1. Background

Multitasking can be defined as performing two or more activities during a specific period where a person perceives it as a seemingly simultaneous engagement in multiple tasks(1). In sports, the captain’s leadership skills play a significant role in the performance of the team as a whole. It’s not easy to be an effective leader for the captain as it takes hard work to gain the confidence and trust of all the members of a team. For the captain, this is a huge responsibility to carry out and he is constantly engaged in several different tasks so it is important for him to be able to utilize situational leadership skills to perform effectively on the field. There are several types of cognitive systems function according to the task at hand, whether it is performed simultaneously or one at a time. Also, every area of the brain is involved in processing different kinds of information and all react differently towards each stimulus such as hippocampus is activated during processing context and extracting information from textbooks during reading or study and striatum is used while performing tasks out of habit like brushing teeth, cooking or typing. According to Dzubak(1) when a player is focused on learning anything new on-field and there are a lot of distractions involved, the player’s brain is trying to “wing it” by utilizing the striatum which is not appropriate for long term visualization, memory, cognition and understanding because stances, positioning and skills in sports are memories that are stored in the striatum after they have been practised enough number of times in a particular way and in a particular environment. All memories that are stored in the striatum part of the brain are related to a scenario in which they were grasped. Hence, a professional athlete automatically uses this part of his brain while performing sports. The productivity derived from multitasking depends on the cognitive ability of the prefrontal cortex of...
the human brain. The speed with which it processes information can otherwise be improved through constant practise and effort\(^{(2)}\). Thus, team captains face difficulty in transferring this knowledge from one part of the brain to another while playing on the field. An athlete also actively utilizes some other cognitive parts of the brain such as the cerebellum at the back of the brain, below the cerebrum. It is an important part of the brain which controls balance, movement, and coordination and plays a significant role in sports where the athlete’s motor skills function and the muscles work together. Carrier, Rosen and Cheever\(^{(3)}\) are certain with their earlier findings that multitasking can be a definite source of anxiety, depression and frustration. Multitasking can affect a person’s ability to pay attention to a significant amount since it demands more energy from the brain and increases distractions \(^{(4)}\).

1.2. Significance of the study

Some studies have argued that multitasking is not as beneficial as people think it is and it reduces the ability of the human brain to focus as it quickly shifts from one task to another which results in a loss of the significant amount of time and ultimately takes a longer time to complete the tasks. In sports, team captains are generally the most prone to perform multiple tasks which involves acting as the mediator among his teammates, referee, coach and manager. His job is coordinating and communicating among these on the field while also playing simultaneously and therefore sometimes they might be switching their focus from one task to another during a game which may or may not result in a good performance in sports. After witnessing several records of UEFA Champions League, the conclusion states that team captains scored fewer goals compared to other players in a team. Therefore, this study is specifically targeted towards the team captains of football to provide them with the right set of knowledge about multitasking and whether it plays as the core factor in affecting their performance during a game.

2. Material & Methods:

To generate facts about multitasking whether it acts as a hindrance for an elite player, an archival study has been conducted to acquire the knowledge about the experiences of professional sport performers and determine the challenges that they face as captains. A homogenous sample of 8 male participants was purposely selected for this study which was conducted by Cotterill and Cheetham\(^{(5)}\). The sample population was selected based on their experience as captains in professional rugby in EPL. An interview was conducted with each subject to gain an insight into their experiences of captaincy in professional rugby to determine the underlying causes of multitasking and whether it affects their gameplay. This approach was targeted to ponder about a broad range of issues and the questions were designed to extract information about the captain’s psychology, responsibilities, and performance on the field. Few questions asked in the interview were: “What challenges have you faced when acting as captain of your team?” and “Tell us about your responsibilities as a captain that you have in your current role?”. The answer about the importance of the relationship between the coach and the team captain was highlighted by one of the participants where he mentioned: “The captain needs to know what the coach wants on field. To coordinate with teammates and portray what the coach wants us to know is difficult as a captain.” There are certain skills that a team captain acquires while playing his role as the leader which involves “player management”. This was highlighted by one of the participants who reflected: “You tend to help people in different ways. Some players need support while others need some confidence boost. It is all about identifying which players need what and a little bit is about management. An efficient captain brings out the best in each player.” The captains reported constant frequency of responsibilities such as role modeling, trust-building among peers, encouraging teammates and acknowledging contributions from their peers both on and off field\(^{(6)}\).

Ultimately each participant demonstrated his approach towards captaincy. Several factors emerged influencing the broader range of issues including multitasking which is directly proportional to the number of responsibilities that a captain holds. An athlete’s perception is an important psychological aspect that is considered during his performance on the field \(^{(7)}\). For a football player, it is important to consider field positioning and movement perception during a match. In basketball, passing the ball, targeting the hoop and accuracy in determining the
opponent’s pass of the ball is only obtained after numerous sessions of practice, but even in these situations, athletic performance depends highly on the development level of one’s perception.

While these activities are skills required during the play, they are a part of the team sport and demand a high level of consciousness and concentration from the player, especially the captain as these skills are a part of the many other responsibilities that a captain needs to carry out. Individuals who participate in team sports report high levels of motion perception skills which allows them to better grasp complex and dynamic information\(^9\). The captains that are engaged in team sports like football, basketball and rugby develop skills in social interaction and structured play and carry out both tasks at the same time which helps them to acquire and develop a larger hippocampus as compared to other individual players in the sport. This ultimately assists the team captains to manage and execute their responsibilities more efficiently through enhanced cognition and perception. While multitasking may be considered as a myth, the productivity generated from it entirely depends upon the person performing and focusing on several tasks at once.

3. Results and Discussion:

In a team sport like Football, the title of captain is provided to a team member who carries leadership qualities. The title is mainly for respect, but often the captain holds many responsibilities on and off the field for strategy building and teamwork\(^9\). A team captain is a person who plays a significant role of mediator between the coach, manager, teammates, and referee\(^10\). The captain is responsible for all the actions of his teammates on the field and its implications can be both positive and negative. Researchers have argue that a captain is more respected when he carries his duties sincerely on-field as well as off-field and therefore, he is always chosen based on a level headed mindset, wisdom and leadership skills where physical abilities matter very little\(^9\).

A player’s body takes up a lot of mental energy on the field especially if there seems to be a lot of transition between the level of competition of the sport. For example, Alan Kelly, the Sheffield United soccer goalkeeper explained his mental condition after he made his debut for the Republic of Ireland in 1994. There would have been a lot of pressure on his mind if he had not put enough effort to increase his concentration during the game even though he did not have much to do on the field. He witnessed changes in his mental state the most when jumping from league to international football. Under such circumstances, the ability to win comes 90% from the mind and 10% from the body, whether a player is a team member or a captain\(^11\).

Although the role of football in developing the mental health of a player is quite heavy as it helps in increasing their self-confidence and self-esteem\(^12\), multitasking also takes up a lot of mental energy of an athlete on the field. As a result, it becomes necessary for the athlete to manage and control their urges to perform multitasking especially when they are experiencing something new in their athletic career like the aforementioned transitions in elite sport. Arguably, there are certain benefits of multitasking which many people fail to perceive. Under specific conditions, multitasking can prove to be successful. According to courage\(^13\), when an individual has enough control over his cognition, perception and reciprocated behaviour associated with the task at hand, it leads to enhanced results while performing multiple activities at the same time. Additionally, when the learning environment is appropriate and the person gets sufficient time to practice multiple activities, multitasking strategies prove to be more successful and improves the ability of the brain to acquire knowledge\(^14\).

According to studies conducted by Thompson\(^15\) there is a common myth about multitasking that science has proved wrong. It says that people do not multitask; they perform switching of tasks from time to time. They merely switch swiftly from one task to another and it seems like they are performing multitasking. Similarly, team captains feel like they are multitasking when they are playing on the field. However, if they halt to process their activity, they will realize that coordinating with a coach while scoring a goal is impossible. What they do is constantly shift their attention from their coach for signals to scoring a goal. This is how a person perceives such activities as multitasking while it is only an illusion.
Although, engaging in multiple tasks at a time may decrease the performance levels, the way one perceives the activity can improve performance\textsuperscript{(16)}. The ones who perceive an activity as multitasking tend to be more engaged and consistently work towards the task to outperform those who perceive the same activity as single-tasking. The captains who were chosen as participants for this study are people who either perceive all their responsibilities as multitasking out of anxiety or pressure or do not consider it as any kind of leadership pressure at all. There is a lot a captain needs to tackle and carry out on the field which always involves above-mentioned responsibilities as discussed by the captains. The statements mentioned by the participants determine how the captain’s multiple roles to serve as the leader of the team puts him in a tight spot during games where he needs to make sure every member of the team gets the coach’s signal. Player management indicates one of the many responsibilities that the team captain holds. But this entirely depends upon the captain to perceive it as a single-tasking or multitasking activity.

Performing multitasking has led to anxiety and frustration which has been scientifically proven by Carrier, Rosen and Cheever\textsuperscript{(3)} and leadership anxiety is more common amongst team captains of local football compared to elite football. However, this kind of anxiety can be lessened and elite players of EPL are constantly made to train their mind to withstand any kind of leadership anxiety and pressure since they need to perform well despite all the public and media attention. Even if they feel the need to multitask, they handle it in a systematic manner and manage to boost up their teammates while taming their own emotions\textsuperscript{(17)}.

The state of constant external stimulation over cognition generally affects the ability to process new information for learning. Young adults find it difficult to cope with an activity that provides little to no stimulation whereas they are drawn to performing two or more activities (multitasking) where the level of stimulation is high. In other words, the practice of multitasking only makes the person feel better because he has high external stimulation and low concentration ability. Performing multitasking does not increase the ability to solve the problem or learn more things faster. Some people are quite skilled in the field of multitasking and are able to easily task switch however the time taken to finish one task with undivided attention is equivalent to the time taken to half finish two tasks at a time\textsuperscript{(1)}. The learnings that are derived through multitasking are limited, inflexible and are derived from the mere stimulation of the mind where it fails to function to its utmost efficiency like it can with undivided attention. The quality of the information processed is not high enough for the brain to be able to register it and use it practically.

4. Conclusion:

The aim of this study was to determine whether multitasking affects the performance of players at the elite level. While the results showed that any activity, when perceived as multitasking, enhances performance it also highlighted the fact that it contributes to illusion and perception. A considerable number of team captains claim that do not score as many goals compared to their teammates, but they outperform everyone in team and player management. Additionally, this study also proved that multitasking is simply task switching which means that any two activities or more when performed simultaneously and seen as paramount by the society, is a myth. The cerebral cortex is not designed to perform two or more activities simultaneously. The brain extracts and processes information from one source and its focus remain on the same source in the form of residual attention even after switching onto another task superficially. The average period of residual attention is 5 seconds even after task switching. Further research needs to further clarify other underlying causes that result in fewer goals scored by a team captain.

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