Reaction time is the interval time between the presentation of a stimulus and the initiation of the muscular response to that stimulus. A primary factor affecting a response is the number of possible stimuli, each requiring their own response, that are presented. If there is only one possible response (simple reaction time) it will only take a short time to react. If there are several possible responses (choice reaction time) then it will take longer to determine which response to carry out.

**Improving Reaction Speed**

**Reaction Time**

Reaction time itself is an inherent ability, but overall response time can be improved by practice. Coach and athletes need to analyse the type of skill and the requirements of their sport and decide where overall response gains can be made. Consider the following:

- **Detecting the cue** - in a sprint start, focusing on the starter's voice and the sound of the gun and separating this from background crowd noise and negative thoughts
- **Detecting relevant cues** - a goalkeeper learning to analyse body language at penalties
- **Decision making** - working on set pieces and game situations
- **Change in attention focus** - being able to switch quickly from concentration on the opponent to concentration on the field of play in invasion games
- **Controlling anxiety** - which slows reaction times by adding conflicting information
- **Creating optimum levels of motivation** - 'psyching up'
- **Warm up** - to ensure the sense organs and nervous system are ready to transmit information and the muscles to act upon it

**Anticipation**

Anticipation is a strategy used by athletes to reduce the time they take to respond to a stimulus e.g. the tennis player who anticipates the type of serve the opponent will use (spatial or event anticipation). In this case, the player has learnt to detect certain cues early in the serving sequence that predicts the potential type of serve. This means the player can start to position himself or herself for the return earlier in the sequence than usual and thus give themselves more time to play the shot when the ball arrives. Obviously, there are dangers for the tennis player in anticipating in this way but the advantages of getting it right are great.

**Factors influencing response time**

Response time is the sum of reaction time plus movement time. Factors that may influence the performer's response are (Davis 2000)

- Gender and age (see figure below)
- Stage of learning
- Psychological state
- Level of fitness
- Number of possible responses
- Time available
- Intensity of the stimuli
- Anticipation
- Experience
- Health
- Body Temperature - colder the slower
- Personality - extroverts react quicker
- State of alertness
- Length of neural pathways

**Mean, SD and F Value among national kabaddi players and national individual game players dimension on visual reaction time**

Mean of national kabaddi players was 738.05, SD = 57.79 and second mean of national individual players was 661.49 SD = 64.93 factor of anxiety and F value was 247.86 and two mean is highly significant at 0.01 level and 0.05 level and both levels was significant as well as null research hypothesis was rejected (there was no significant difference between national kabaddi players and national individual game players dimension on visual reaction time ) and research hypothesis was accepted it means national kabaddi players had significantly high visual reaction time than the national individual game players.

**Mean, SD and F Value among male and female players dimension on visual reaction time**

Mean of male players was 673.99, SD = 50.83 and second mean of female players was 725.55 SD = 81.13 factor of anxiety and F value was 112.41 and two mean is highly significant at 0.01 level and 0.05 level and both levels was significant as well as null research hypothesis was rejected (there was no significant difference between male and female players dimension on visual reaction time ) and research hypothesis was accepted it means male players had significantly high visual reaction time than the female players.
All the three main effects were highly significant, but they were functioning independent of each other. This could be observed from the interaction effects. Interaction A x B was highly significant $F(1, 396) = 127.49, p = 0.01$. The factor of students and gender were interdependent on each other. It means that there was significant interaction between types of players and gender dimension on visual reaction time.

**Mean, SD and F Value among national kabaddi players and national individual game players dimension on auditory reaction time**

Mean of national kabaddi players was 733.90, SD = 60.92 and second mean of national individual players was 665.28 SD = 62.29 factor of anxiety and F value was 180.29 and two mean is highly significant at 0.01 level and 0.05 level and both levels was significant as well as null research hypothesis was rejected (there was no significant difference between national kabaddi players and national individual game players dimension on auditory reaction time ) and research hypothesis was accepted it means national kabaddi players had significantly high auditory reaction time than the national individual game players.

**Mean, SD and F Value among male and female players dimension on auditory reaction time**

Mean of male players was 729.03, SD = 71.7 and second mean of female players was 670.16 SD = 55.44 factor of anxiety and F value was 132.7 and two mean is highly significant at 0.01 level and 0.05 level and both levels was significant as well as null research hypothesis was rejected (there was no significant difference between male and female players dimension on visual reaction time) and research hypothesis was
accepted it means male players had significantly high auditory reaction time than the female players.

All the three main effects were highly significant, but they were functioning independent of each other. This could be observed from the interaction effects. Interaction A x B was highly significant F (1, 396) = 49.68, p = 0.01. The factor of students and gender were interdependent on each other. It means that there was significant interaction between types of players and gender dimension on auditory reaction time.

**Mean SD and F Value among national kabaddi players and national individual game players dimension on Extraversion**

Mean of national kabaddi players was 14.44, SD = 2.77 and second mean of national individual players was 16.58 SD = 2.01 factor of extraversion and F value was 80.16 and two mean is highly significant at 0.01 level and 0.05 level and both levels was significant as well as null research hypothesis was rejected (there was no significant difference between national kabaddi players and national individual game players dimension on Extraversion ) and research hypothesis was accepted it means national kabaddi players had significantly high Extraversion than the national individual game players.

**Mean, SD and F Value among male and female players dimension on Extraversion**

Mean of male players was 15.92, SD = 2.49 and second mean of female players was 15.11 SD = 2.73 factor of extraversion and F value was 11.68 and two mean is highly significant at 0.01 level and 0.05 level and both levels was significant as well as null
research hypothesis was rejected (there was no significant difference between male and female players dimension on Extraversion) and research hypothesis was accepted it means male players had significantly high Extraversion than the female players.

All the three main effects were highly significant, but they were functioning independent of each other. This could be observed from the interaction effects. Interaction A x B was highly significant F (1, 396) = 1.75, p = 0.01. The factor of students and gender were not interdependent on each other. It means that there was no significant interaction between types of players and gender dimension on Extraversion.

**Mean SD and F Value among national kabaddi players and national individual game players dimension on Neuroticism**

Mean of national kabaddi players was 14.42, SD = 2.75 and second mean of national individual players was 15.95 SD = 2.63 factor of Neuroticism and F value was 32.85 and two mean is highly significant at 0.01 level and 0.05 level and both levels was significant as well as null research hypothesis was rejected (there was no significant difference between national kabaddi players and national individual game players dimension on Neuroticism) and research hypothesis was accepted it means national kabaddi players had significantly high Neuroticism than the national individual game players.

**Mean, SD and F Value among male and female players dimension on Neuroticism**

Mean of male players was 15.39, SD = 2.88 and second mean of female players was 14.98 SD = 2.70 factor of Neuroticism and F value was 2.29 and two mean was
significant at 0.01 level and 0.05 level and both levels was not significant as well as null research hypothesis was rejected there was no significant difference between male and female players dimension on Neuroticism.

All the three main effects were highly significant, but they were functioning independent of each other. This could be observed from the interaction effects. Interaction A x B was highly significant $F (1, 396) = 4.3, p = 0.05$. The factor of students and gender were not interdependent on each other. It means that there was no significant interaction between types of players and gender dimension on Neuroticism.