

SMRT Whole Body Reaction Time 515-GM Instrument

ABSTRACT Reaction time (RT) is one of the fitness component based on motor skills but vital to health related skill too. Reaction time not only enhance performance in sports. React faster according to the situation in our daily life also very important to be safe and smart. Simple examples in our daily life are when apply sudden brake while driving, react when touched hot items, move away immediately to the right direction in danger situations and so on. In sports reaction time is one of the important skill required to perform excellently. It reflects the minimal time needed to respond to a stimulus during the game played. The excellent performance in games requires not only physical movement capabilities but also needs sensory cognitive skills. Most of the sports performed under pressure because of the physical, psychological, environmental demands (Salimin et.al. 2017). Expectations and pressure to perform to a high standard requires athlete's ability to quickly and accurately pick up relevant stimulus. It will reduce the time of making a decision and will allow more time for preparation of motor movement (Savelsbergh, Williams, Van der Kamp, & Ward, 2005). Perceptual abilities and reacting faster is an advantageous to the player's to perform successfully (Mori, Ohtani, & Jmanaka, 2002). Reaction time is a key of strategy in most of the sports which require fast and immediate reaction such as martial arts, team ball games and sprinting events in athletics. Most of the reaction time testing conducted individually. It will take more time and not conducive for the trainer and athlete. Base on this factor the researchers design a **Whole Body Reaction Time 515-GM Instrument** which can test 5 individuals in one time. Its' easy, economic and using simple electronic system to test and record the data. The instrument able to test reaction time via sound, light or both. The validity test using 30 samples showed there is high validity $r = 0.80$ and the reliability $r = .87$. This findings proved that this device suitable and reliable to measure any individuals whole body reaction time. The instrument is portable and manageable by any trainers or teachers to evaluate their players' reaction time accordingly in a short time.

NOVELTY

Testing players' reaction time usually conducted base on requirement and needs. Most of the test will be conducted individually. It will take more time to test high number of people. This will reduce the interest to test reaction time among sports players. Considering this situation the researchers design a whole body reaction time instrument where we can test 5 subjects in one time. The reaction time tested by sound (auditory) and light (visual). The procedures are very simple and the device is portable. Physical Education Teachers can run the test easily in a small room or empty space. The evaluation process can be done easily with data storage. The instruments' storage also very easy and needs small space only.



USEFULNESS

SMRT Whole Body Reaction Time 515-GM Instrument can measure athletes' Reaction time easily and accurately. Reaction time is vital in most games require dynamic and immediate action from the players especially in catching, hitting and passing to the right target. It's also very important in sprinting events which requires fast starting to win a race.

2. The road transport department also can use this devise to test the new drivers reaction time in applying sudden brake while driving because its' important to evaluate their reaction time to avoid accidents.



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Technological Innovation with Visual and Auditory Stimulus: Testing the Validity and Reliability of Smart WBRT 515-GM

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Abstract: Reaction time (RT) is one of the fitness component based on motor skills but vital to health related skill too. Reaction time not only enhance performance in sports. React faster according to the situation in our daily life also very important to be safe and smart. Simple examples in our daily life are when apply sudden brake while driving, react when touched hot items, move away immediately to the right direction in danger situations and so on. In sports reaction time is one of the important skill required to perform excellently. It reflects the minimal time needed to respond to a stimulus during the game played. The excellent performance in games requires not only physical movement capabilities but also needs sensory cognitive skills. Most of the sports performed under pressure because of the physical, psychological, environmental demands (Salimin et.al. 2017). Expectations and pressure to perform to a high standard requires athlete's ability to quickly and accurately pick up relevant stimulus. It will reduce the time of making a decision and will allow more time for preparation of motor movement (Savelsbergh, Williams, Van der Kamp, & Ward, 2005). Perceptual abilities and reacting faster is an advantageous to the player's to perform successfully (Mori, Ohtani, & Jmanaka, 2002). Reaction time is a key of strategy in most of the sports which require fast and immediate reaction such as martial arts, team ball games and sprinting events in athletics. Most of the reaction time testing conducted individually. It will take more time and not conducive for the trainer and athlete. Base on this factor the researchers design a **Whole Body Reaction Time 515-GM Instrument** which can test 5 individuals in one time. Its' easy, economic and using simple electronic system to test and record the data. The instrument able to test reaction time via sound, light or both. The validity test using 30 samples showed there is high validity $r = 0.80$ and the reliability $r = .87$. This findings proved that this device suitable and reliable to measure any individuals whole body reaction time. The instrument is portable and manageable by any trainers or teachers to evaluate their players' reaction time accordingly in a short time.

Keywords: Validity; reliability; Whole Body Reaction Time 515-GM Instrument; visual; auditory stimulus

