



Proposed vision for modifying tools used in karate sport Using human engineering (argonomics)

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Abstract:

Aim The study aims at using human engineering (argonomics) in the design of sports tools in karate sport and the human body's connection with the anthropometric measurements and The research sample (10) players the tools to be used (teeth protect, chest protect, shin guard, karate suit) results Karate sport with science and technology -Upgrading the skill and technical performance in karate sport using human engineering - The use of human engineering achieve many benefits in the design of tools **Conclusion:** We recommend the use of human engineering (Agronomics) with the technology of the design of sports tools - We recommend the generalization of human engineering (Agronomics) in the design of sports instruments in general and on all other mathematics

Keywords: Agronomics - Human Engineering.

Introduction:

At the beginning of the twenty-first century, the world witnessed a tremendous development in the use of technology, whether digital or arithmetic in multimedia technology, and a great interest in the issues of using sports tools in the field of training and competition and the accompanying technological development in various areas of life and helped to confirm the role of technology in the life of sports To study its needs and requirements and work on its development (Asim, 2019)

Research problem:

The use of the principles and rules of Agronomics may contribute to the appropriateness between the tools used by the individual and the measurements of the body and shape and size, which achieves the best possible performance may be useful for the application of this study is to make the designs of the tools are characterized by a kind of miniaturization and simplification at a time when the design is simple in Its size, lines and colors will be able to perform many difficult tasks, including the

achievement of all the individual requirements that help him to carry out his activities and achieve the technical purpose, skill and planter with ease. The development of modern technology has led to the provision of some technological methods Can contribute effectively to controlling the attractive aesthetic form of skill tools and .performance

Which prompted the researcher to study the problem and thus can be limited in several points?

- Suggested vision to modify karate suit (jacket, trousers and belt)
- Proposed vision to modify the toothpaste (Teeth protect)
- Suggested vision to modify the leg shield (shin protect)
- suggested vision to modify the chest protector (chest protect)
- proposed vision to modify the hand protect (hand protect)

Research importance :-

The possibilities of unsuitable tools (with some anthropometric properties that require a more efficient approach to tools) and at the same time overcome the possibilities of inadequacy of tools. This is done through the principles of Ergonomics, which is one of the most important aspects of the anthropometric measurement of the body.

Study procedures

Study Methodology: The researcher used the descriptive approach as the appropriate method for the nature of this study.

Community of Study: The study society shall consist of 100 students from the training center (3) of the Egyptian Karate Federation.

Sample of the study: The sample was chosen by the intentional method and its strength (10) from the training center (3) of the Egyptian Karate Federation.

The use of geometrical equations to access modified tools: Before reaching the tools in accordance with the geometry of human engineering (Argonomics), until the dimensions (Teeth protect - shin protect - chest protect - hand protect - jacket, trousers and belt) and equipment according to Of the rules of human engineering (argonomics) as it is necessary to use the methods and methods of engineering (human), which works to apply this information to design the work environment in light of the available possibilities.

- Equation of calculating the body flat:

$$\text{Length} \times \text{Weight (3600)} \text{ All under the square root}$$

The first hypothesis: - Karate suit (jacket and trousers and belt)

Table (1)

The human body size of the sample

Section Name	The nature measures		human engineering(ergonomics)	
	centimeter	inch	centimeter	inch
length	120	47.244	1.12	18.6
weight	38	-----	1496.06	588.9988
Arm length	50	19.685	44.64	17.5748
Shoulder length	35	13.7795	31.25	12.3031
Chest width	78	30.7086	69.6	27.4015
Length of suit	65	25.5905	58.03	22.8464
Length of trousers	85	33.4645	75.89	29.8779
Central pants	75	29.5275	66.96	26.3622
Man's rotation	25	9.8425	22.32	8.7874
Hand rotation	6	2.3622	5.35	2.1063
The rotation between trousers	20	7.874	17.85	7.0275



2: - Teeth protect (Teeth protect)

Table (2)

Special Measurements for teeth Protect for Sample Research Category

Section Name	The nature measures		human engineering(ergonomics)	
	centimeter	inch	centimeter	inch
Length face	17	47.244	15.17	18.6
Face View	15	1496.06	13.39	588.9988
Jaw to chin	12	19.685	10.28	17.5748
Down nose	4	13.7795	3.75	1.4764
Open your mouth	7	2.7559	6.25	2.4606



3: Shin protect

Table (3)

Special assays are Shin protect the stem of the sample

Section Name	The nature measures		human engineering(ergonomics)	
	centimeter	inch	centimeter	inch
Man's rotation	25	9.8425	22.32	8.7874
Muscle clip quarantine	30	11.811	26.78	10.5433
Leg length	34	13.3858	30.35	11.9488
Stop the man from above	24	9.4488	21.42	8.4331
The man's palm from the bottom	23	9.0551	20.53	8.0827



4: - Modify chest protector (chest protect)

Table (4)
Special assays modified chest protector for the sample research category

Section Name	The nature measures		human engineering(ergonomics)	
	centimeter	inch	centimeter	inch
Suit length for upper half	65	25.5905	58.03	22.8464
Chest width	78	30.7086	69.6	27.4015



5: - Hand protect

Table (5)
Special Measurements Modified Hand Protect Modification for Sample Research Category

Section Name	The nature measures		human engineering(ergonomics)	
	centimeter	inch	centimeter	inch
Wrist rotation of the hand	6	2.3622	5.35	2.1063
Length of the palm of the hand	17	6.6929	15.17	5.9724
Rotation of the palm from the outside	9	3.5433	8.03	3.1614
Spin the palm from inside	6	2.3622	5.35	2.1063



Results :

- 1- Communicating the tools used in karate sport with scientific and technological standards
- 2- Upgrading the skill and technical performance in karate sport using human engineering
- 3 - The use of human engineering achieve many benefits in the design of tools

Recommendations:

- 1 - We recommend the use of human engineering (Ergonomics) with the technology of the design of sports tools
- 2 - We recommend the generalization of human engineering (Ergonomics) in the design of sports instruments in general and on all other mathematics

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