



国際空手大学

Science & Karate Training



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Learning A New Skill



Three Stages of learning a New Skill:

- 1. Mental Stage** – The stage of mental understanding of the skill (Conscious Incompetence)
- 2. Practice Stage** – The stage of being able to do the skill but still needing conscious thought. (Conscious Competence)
- 3. Automatic Stage** – The stage of developing automatic skill - little or no conscious thought whilst performing the skill. (Unconscious Competence)

Conditioning for Karate



- Elements of Fitness & Performance:

Physical	Mental
1) Strength	1) Attitude
2) Speed / Power	2) Motivation
3) Agility	3) Goals
4) Balance	4) People Skills
5) Flexibility	5) + Self-Talk & Mental Imagery
6) Endurance	6) Manage Anxiety/Emotions
7) Co-ordination	7) Concentration

Speed Training



Speed of Technique:

- 1) **Sound Basic Techniques** – correct biomechanics. center out techniques not end to end techniques.
- 2) **Strength and Endurance** – resistance training: body weight, elastic bands, weights, sets with long recovery moving to shorter recovery periods.
- 3) **Plyometrics** – efficient, faster and stronger muscle contractions.
- 4) **Aggressive Mental Attitude** – strong desire to make high speed movements. Anticipation.
- 5) **Sets of Techniques** – single, multiples – number or time.
- 6) **Over Speed Training** – gravity punching down, downhill stepping, elastic bands, release training.
- 7) **Autonomous Techniques** – Repetition until it is automatic.

Speed Training



- Reaction speed to catch a dynamic target:
 - 1) **Mental Attitude** – Strong desire to catch the target yet relaxed mentally.
 - 2) **Physical Readiness** – On balls of feet and relaxed physical state.
 - 3) **Minimize Choices of Response** – The fewer the responses the faster the response.
 - 4) **Stimulus must be Recognizable**

Types of Karate Classes



- Karate for Self-Defense – Original Karate
- Karate for Education – Mental Stimulation +
Character Development
- Karate for Sport – Controlled by the Rules
- Karate for Energy – Ki and Autonomous Learning
- Karate for Health – Therapeutic Karate

Karate Class Plan



- 10 min Warm Up
- 15 min Kihon – Plyometrics
- 25 min Kata – Method / Plyometrics
- 25 min Kumite – Progressions
- 10 min Warm Down

- Form → Function
- Ind. → Partner → Group Work → Test
- Principle of Progressive Challenge
- Principle of Karate for All (Ability/Disability)
- Goal - Autonomous Phase of Learning Skills

Principle of Karate For All



Individual Training in a GENERAL CLASS

- Ability in a General Class – TURN UP CHALLENGE
- Disability – find out The Point of Max. Ability + Alternate Techniques. (Apply Art of Instructing)

WARM UP - Modern Concepts



- **WARM UP - Three Phases:**

1. Light Aerobic Work – Raise body Temp. by 1° C
2. Dynamic Stretching – Remove Muscle Stiffness
3. Karate Specific Activity - Kihon

WARM UP - Benefits



- A proper warm up will enhance performance and reduce injuries, because it will result in:
 - 1) Increased heart rate & respiratory rate for exercise.
 - 2) Blood vessels in muscles dilate increasing blood flow, metabolism and muscle temperature.
 - 3) Increased oxygen delivery to muscles because haemoglobin releases oxygen more rapidly at higher muscle temperatures.
 - 4) Increased efficiency of movement because of lowered viscosity in muscles.
 - 5) Reduce stiffness of muscles.
 - 6) Increased temperature also enhances nerve transmission and muscle contraction & relaxation as well as increase motor unit recruitment required for maximal effort.

What is Plyometrics?



- **Plyometrics** is the use of a **pre-contraction stretch** of a muscle to **enhance** the speed and power of contraction of that muscle.
- **Types of Muscle Activity in Plyometrics:**
 - 1) Conscious Contraction - normal
 - 2) Elastic Recoil - pre-contraction stretch
 - 3) Reflex Contraction - pre-contraction stretch

Plyometrics in Karate



- **Plyometrics can be applied to Kihon:**
 - 1) Legs – Load the support leg, Small angle between thigh and calf.
 - 2) Hips – Small opposite rotation of the hip (Double Rotation)
 - 3) Shoulders – Bow and arrow effect
 - 4) Arms – Pull back before blocking, punching

Kata



- A Method in the Madness:
- 1) Selection of Kata
- 2) Etiquette
- 3) Kata Kihon
- 4) Bunkai
- 5) Sequence - Linkages
- 6) Kime
- 7) Performance

Kumite



- Kumite (Meeting of Hands)
- Method Inherited System: (M. Nakayama)
 - 1) Sanbon/Gohon Kumite
 - 2) Ippon Kumite
 - 3) Jiyu Ippon Kumite
 - 4) Jiyu Kumite

What are the gaps to improve the challenge / Reduce Incompetence. Use Progression of Drills / Strategies.

Cool Down – Modern Concepts



- **COOL DOWN** – Three Phases:
 - 1) Light Aerobic Activity – Reduce HR, BP, Remove Waste Products.
 - 2) Static Stretching – hold for 10 -30 sec. = Flexibility
 - 3) Breathing Exercise & Meditation – Restore Physical and Mental Calm.

Cool Down - Benefits



- An appropriate cool down will:
 - 1) Aid in the removal of waste products from muscles
 - 2) Reduce Delayed Onset Muscle Soreness
 - 3) Improves Flexibility
 - 4) Reduces the heart & respiratory rate to return to its resting levels
 - 5) Reduce the chances of dizziness or fainting due to a slow cooling of the muscles.

Thank You!

