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:

<table>
<thead>
<tr>
<th>Physical</th>
<th>Mental</th>
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</thead>
<tbody>
<tr>
<td>1) Strength</td>
<td>1) Attitude</td>
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<tr>
<td>2) Speed / Power</td>
<td>2) Motivation</td>
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<td>3) Agility</td>
<td>3) Goals</td>
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<tr>
<td>4) Balance</td>
<td>4) People Skills</td>
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<tr>
<td>5) Flexibility</td>
<td>5) + Self-Talk &amp; Mental Imagery</td>
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<tr>
<td>6) Endurance</td>
<td>6) Manage Anxiety/Emotions</td>
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<td>7) Co-ordination</td>
<td>7) Concentration</td>
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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
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
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!