

National Elite Sports Council

**INTERNATIONAL FORUM OF ELITE
SPORTS**

27-28 September 1999

The role of science in modern coaching



**Dr. Pat Duffy, Director
National Coaching and Training Centre**

The Role of Science in Modern Coaching

- Our Approach
- Our Practice
- Issues
- Closing the application Gap

SONIA WINS DOUBLE IN MARRAKECH AND BUDAPEST



- What made the difference?
- Coaching and Science
Interaction of Coaching and Science
- Athletes Understanding and Self Awareness
⇒ Applied to the need of the Athletes



OUR APPROACH

BELIEFS



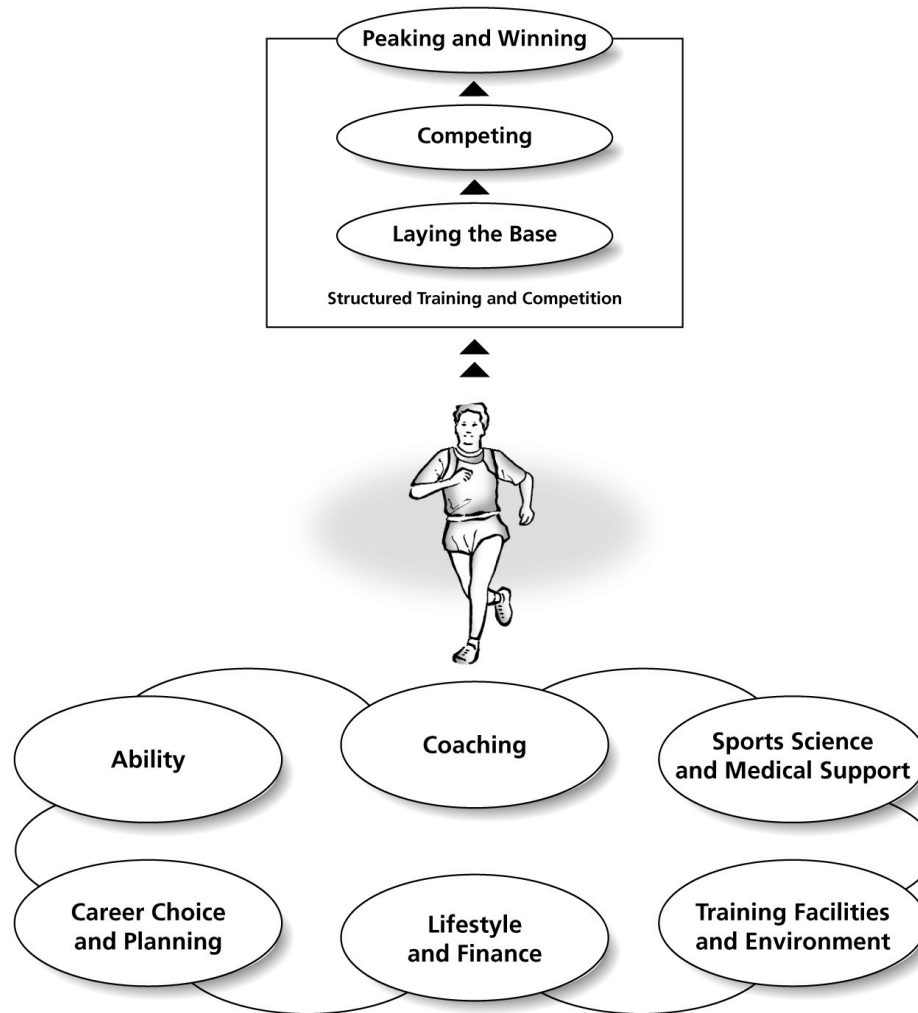
- Athletes should have maximum control over their own destiny - leading to peak performances
- Athlete-centred coaching is critical to maximising potential
- Applied and relevant Sports Science critical to maximising performance and coaching effectiveness
- Sports Science will be most effective when scientists know fully discern their place in the scheme of things.

Scientist should

- Be driven to achieve performance
- Have specific knowledge specialising in a given sport
- Be intuitive, good listeners, problem-solvers, innovators



Figure 1.
Sports science and medical support within
the overall development of the player/athlete



How to make the best use of services

Sports science and medical services are made available to players and athletes (through the use of their PACE card) with a view to improving performance. The use which players and athletes make of such services should be clearly linked to their training and competitive programmes. An example of how the services might be utilised is outlined in Figure 2 below:



Services should be accessed using the procedures outlined in each section of this directory. In addition, coaches, players, and athletes should take into account NGB procedures for accessing sports science and medical support programmes, as in many cases co-ordinated programmes exist. Where such co-ordinated arrangements are in place, players/athletes may be asked to avail of services in specified locations and at specified times.

Mission

⇒ NCTC mission is to provide a world class range of services to NGBs, coaches, players and athletes, thereby:

Strengthening the base and extending the peak in Irish sport.

→ High Performance

← Coaching



+



 Republic of Ireland youth soccer 1/7/1997
Brian Kerr, manager.
© INPHO / Patrick Bolger

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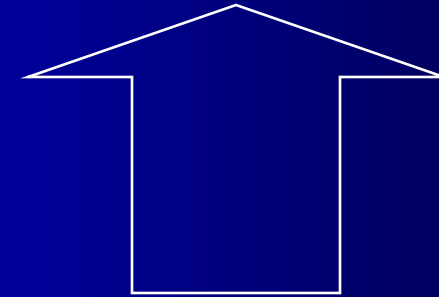


Philosophy

A person is shown in profile, wearing a white tank top, rowing on a black and silver rowing machine in a gym. The background is slightly blurred, showing other gym equipment and a window.

- ⇒ **Athlete Centred**
- ⇒ **Holistic**
- ⇒ **Ethical**
- ⇒ **Working towards**
 - * **Athlete-Driven**
 - * **Coach Guided**
 - * **Service Provider**
 - * **Integrated System**
- ⇒ **All within an integrated system of support**

PERFORMANCE

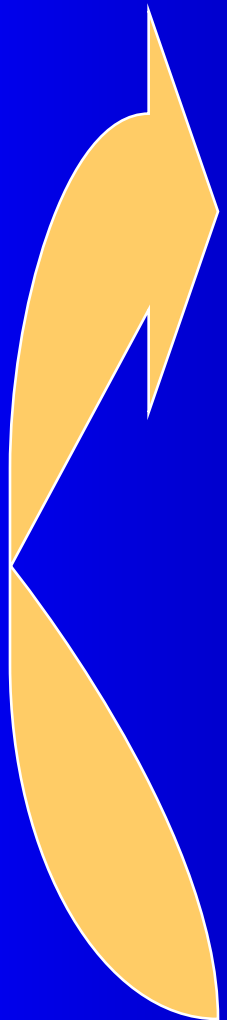


ATHLETE
(Driven)



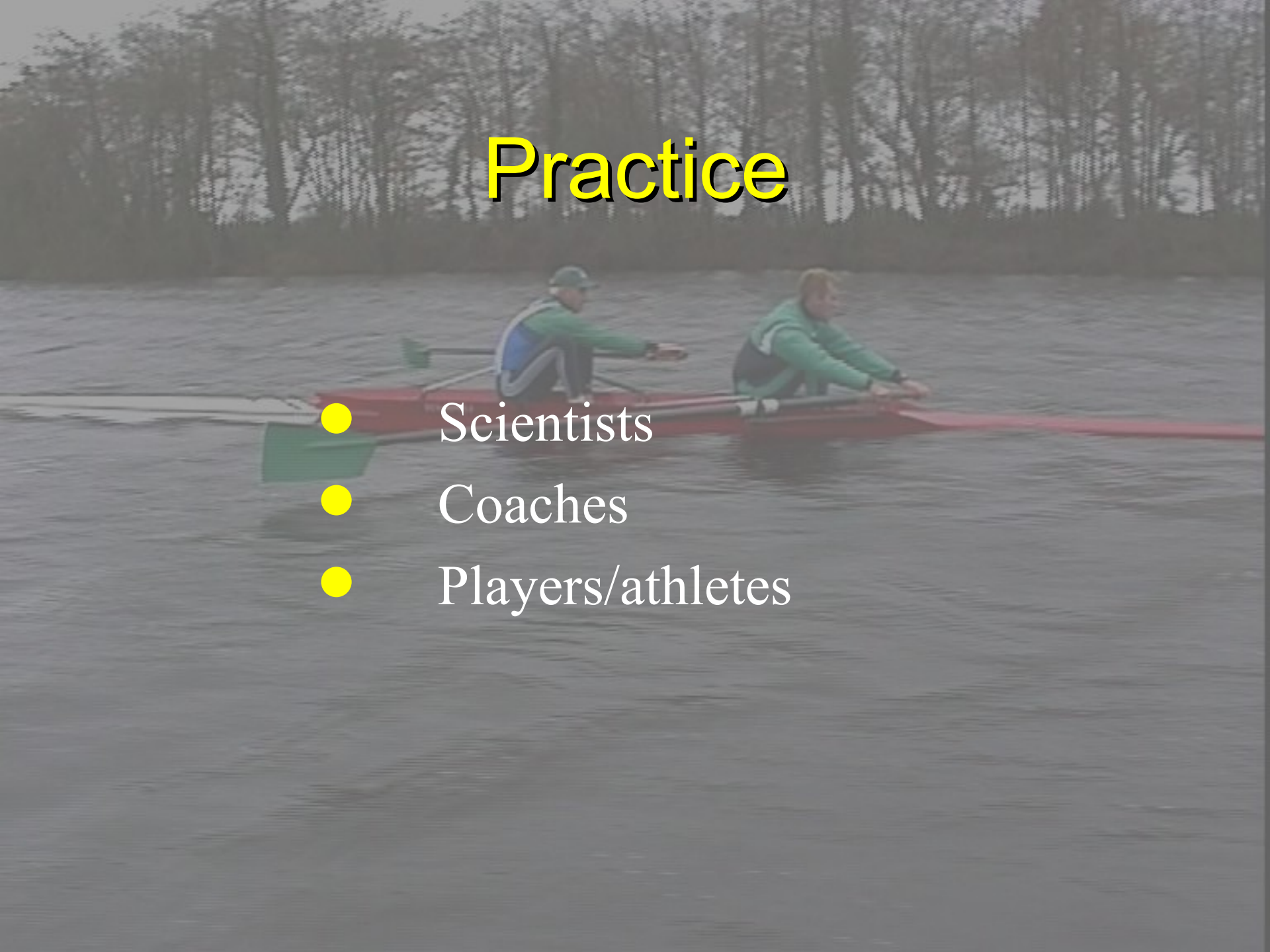
COACH
(Guided)

SPORT SCIENTIST
(Facilitated)



Practice

- Scientists
- Coaches
- Players/athletes



Science into Coaching

A close-up photograph of a person's foot wearing a white and black athletic shoe. The shoe has a prominent white sensor on the sole, likely for gait analysis. The person is wearing white socks with a red logo. The background is a wooden floor.

Sports Scientists

- Sports Science and Medical Network
- Selection Criteria
- Education/In-Career Department

Science into Coaching

Coaches

- Involvement
- Education (NCDP)
- Tutor Development
- Level 3/4 Coaches

Integrated Coach Education

MODEL 1 (Rejected)

Theory



NCTC

Technical



NGB

Practical



NGB

MODEL 2 (Proposed)

Theory



Technical



Practical



NCTC
Facilities



Tutor Ladder

Training of Tutors

Tutor 3

Tutor 2

Coaching Ladder

Level 4

Level 3

Level 2

Level 1

Introduction

In-Service modules (1)

Physical Fitness

Mental Fitness

Child Protection

Role of Coach

School Sport

Integration of People with a disability

Science into Coaching



Athletes

- Development of a system
- Face-to-Face Interaction and Services

Science into Coaching

Athletes

- Structured monitoring/problem-solving programmes involving coaches. * Rowing, Canoeing, Athletics



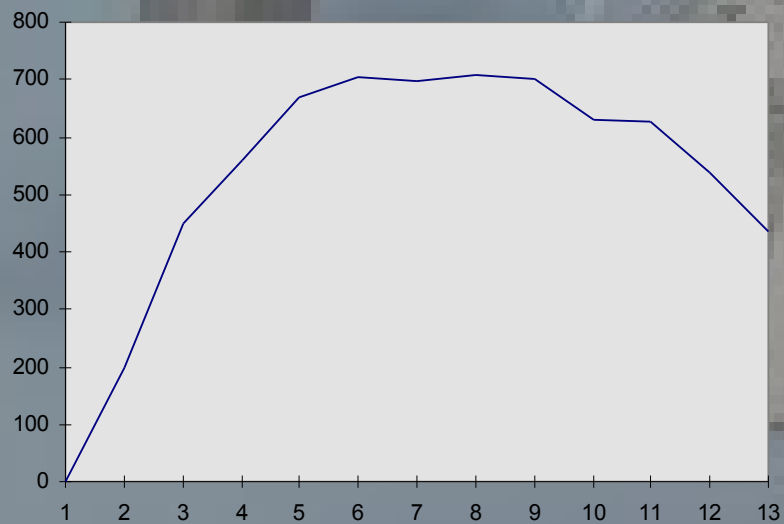
Science into Coaching

A person in a white lab coat is using a handheld device on an athlete's arm. The device is connected to a larger piece of equipment on a table. The background is a laboratory or clinical setting.

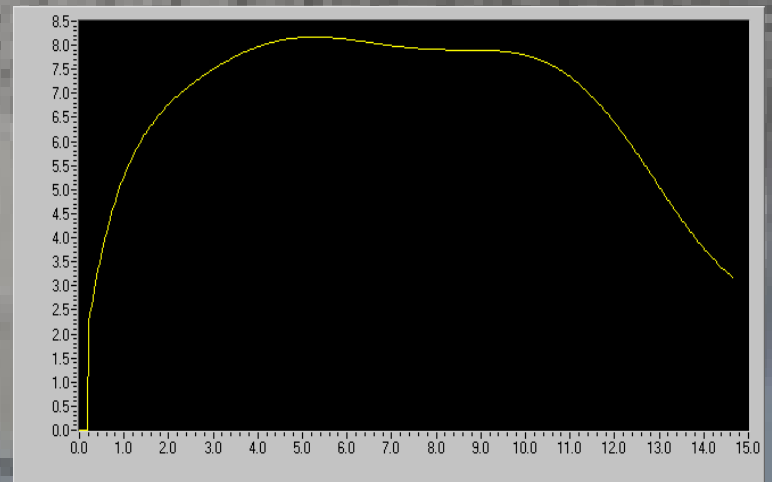
Athletes

- Applied Sports Technology

Old Methods



Specific Methods (Radar)



Science into Coaching

Athletes

- Mobile Unit

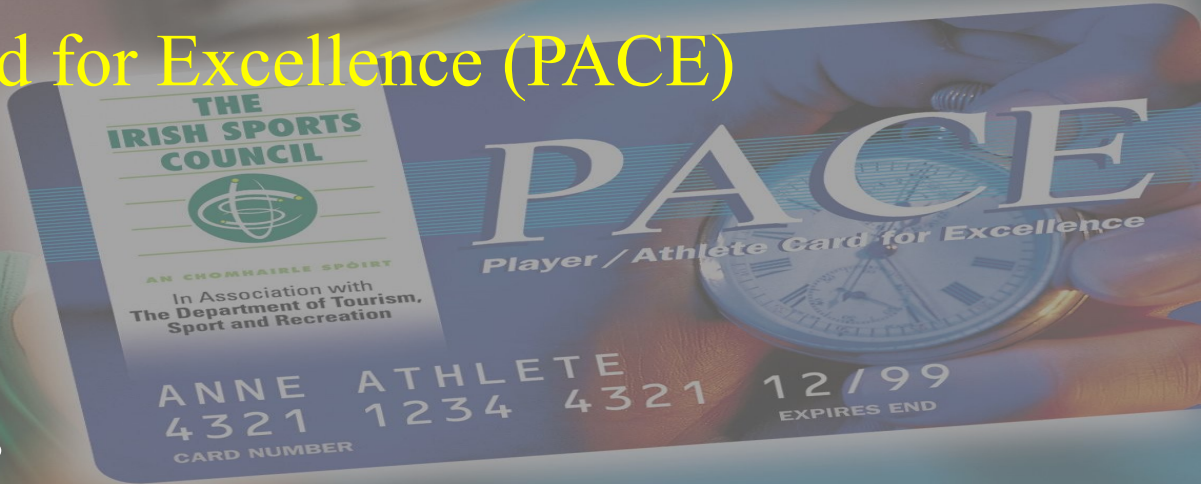


- Success Factors Research

Science into Coaching Players/ Athletes

- Player/Athlete Card for Excellence (PACE)

- * Exercise Physiology
- * Sports Medicine
- * Sports Psychology
- * Sports Biomechanics
- * Sports Nutrition



- Education

- * Workshops

- Career Counselling and Development (ACE)



ISSUES

Issues

A group of athletes in green and red uniforms are celebrating on a field. They are jumping and hugging each other, with their arms raised in the air. The background is a blurred field.

- ? Up-take
- ? Getting a holistic approach to the needs analysis of the athlete
- ? Service v's Research, academic approach
- ? Power - Coaches + NGB's
- ? Lack of Knowledge: Athletes, NGB's Coaches
- ? Volunteer Base -Coaches relative to Players/Athletes

Issues (cont...)

- ? Relationship between the Scientist and the Coach
 - ? Relevance of Sports Science (Application Gap)
 - ? Absence of Performance Management (Integrated performance plan for the development of sport)
 - ? Coaching structures with the sport
 - ? Lack of knowledge among coaches; personal effectiveness and interaction; conflict
- 

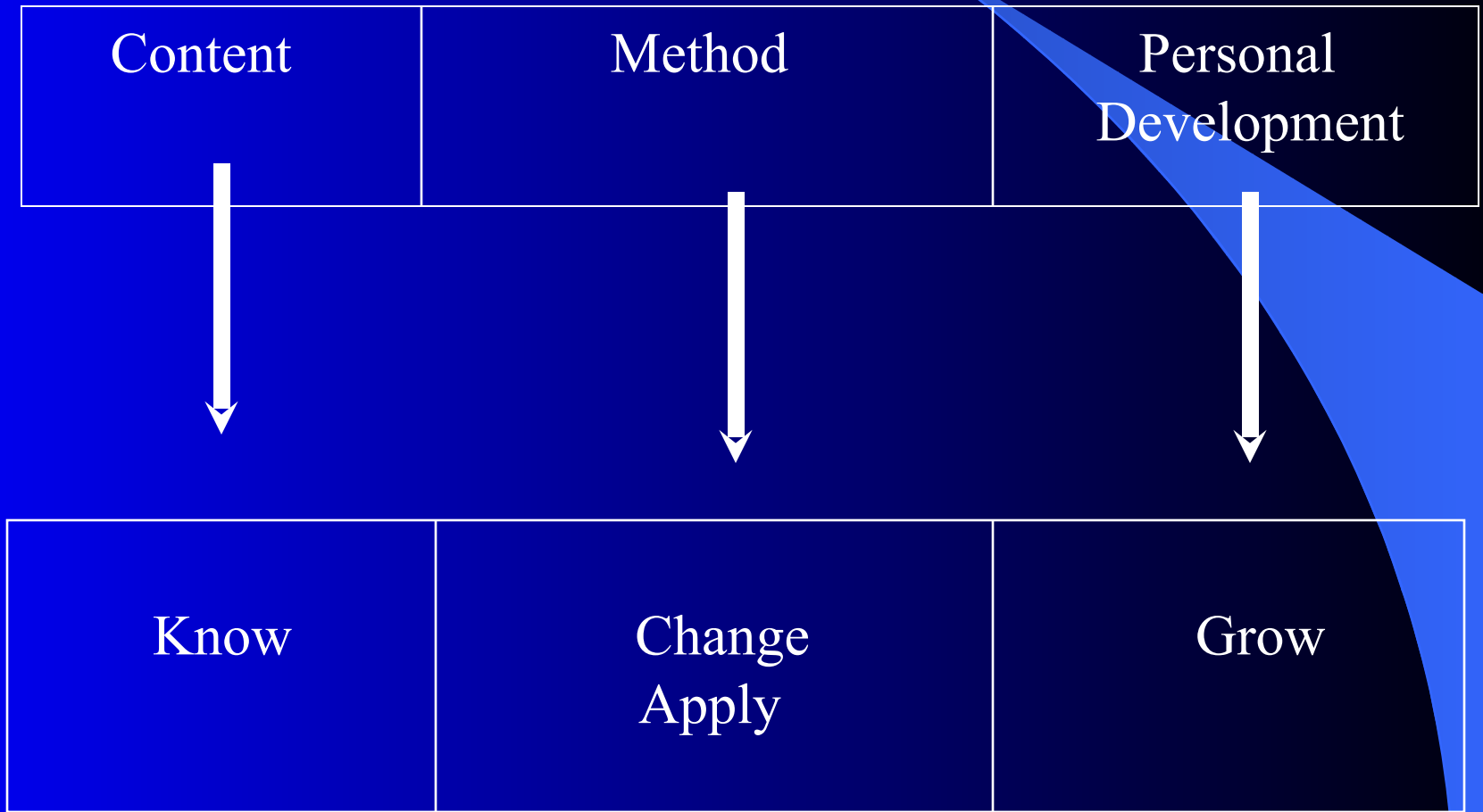
A photograph of two men in a workshop setting. The man in the foreground is wearing a yellow long-sleeved shirt and glasses, and is leaning over a large metal machine, possibly a lathe or mill, with his hands on a component. The man in the background is wearing a dark shirt and is also leaning over the machine, appearing to be working on it. The background shows a workshop with various tools and equipment on shelves and a door. The text "Closing the Application Gap" is overlaid in yellow on the image.

Closing the Application Gap

Coaching into Science

- Start with the major issue/problem
- Needs analysis/listening
- Sports Scientist Facilitation Skills/Adult Learning Principles
- Australian Models (Coaches driving the development)
- Inter-Disciplinary Approach (one room approach)
- Coaching Infrastructure
- Education

Education



● Needs Analysis



Coaching into Sport

Dependent

ATHLETE

Independent





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