

## Q4E Case Studies

### Topic 2 – Performance Analysis and Evaluation

#### Proposed subject usage:

Sport and PE (GCSE/A level)

**e.g. National Curriculum 2006-2007 (Key Stage 4)**

3. Evaluating and improving performance

Judge how good a performance is and decide how to improve it

**e.g. AQA GCSE PE 2007 Specification**

6.2 Analysis of performance

The specification will assess a candidate's ability to analyse performance so as to:

- Determine its strengths and weaknesses
- Improve its quality and effectiveness

**e.g. AQA A Level PE 2007 Specification**

At AS, candidates are required to observe, analyse and evaluate performance.

21.2 Observe the chosen performer in relation to the competent performance of specific techniques for a chosen activity

#### **Ways in which Quintic software can be used in PE:**

- Evaluate the performer's strengths and weaknesses of the core techniques in their sport in relation to the competent performer by identifying and justifying the greatest weakness and suggesting how to bring about improvement.
  - ✓ *Use Quintic features, including frame-by-frame analysis, to identify strengths and weaknesses in student's technique (using Quintic video capture).*
- In order to facilitate an improvement in performance, candidates are expected to research and understand the correct techniques for the core skills.
  - ✓ *Research elite performers' technique from detailed analysis of video files taken from the extensive Quintic video library covering a huge variety of sports.*
- Compare their performance against the competent performer by identifying the causes of strengths/weaknesses in the technique of the core skills.
  - ✓ *Compare students' performance (captured from video) against elite performers using main and best windows and more detailed kinematic or kinetic analysis if necessary.*

#### **Methods:**

Functions of the Quintic Software used:

- Zoom tool
- Export \*.avi function
- Multiple image capture
- Single image capture (jpeg)
- Drawing tools - Lines, Shapes, Angles and Text
- Distance measurement function
- Split Screens and Synchronisation

e.g **Analysis of chosen sport – swimming:**

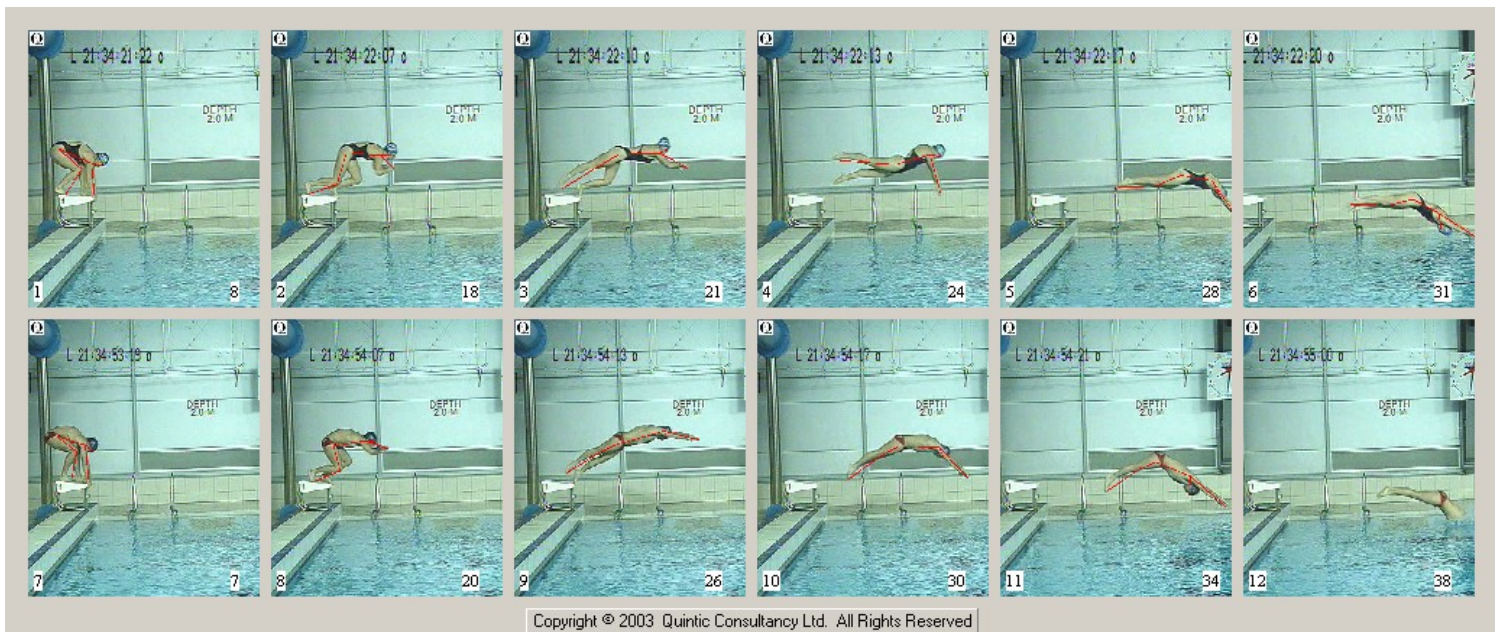
The core techniques to evaluate in swimming are:

- ❖ *Starts/Turns*
- ❖ *Body position*
- ❖ *Arm action*
- ❖ *Head/breathing*
- ❖ *Leg action*

Examples of how these areas could be analysed are shown below:

### Track start

(Using multiple image capture)



Distance off blocks:

Male swimmer – 2.4m

Female swimmer – 2.2m

The male athlete:

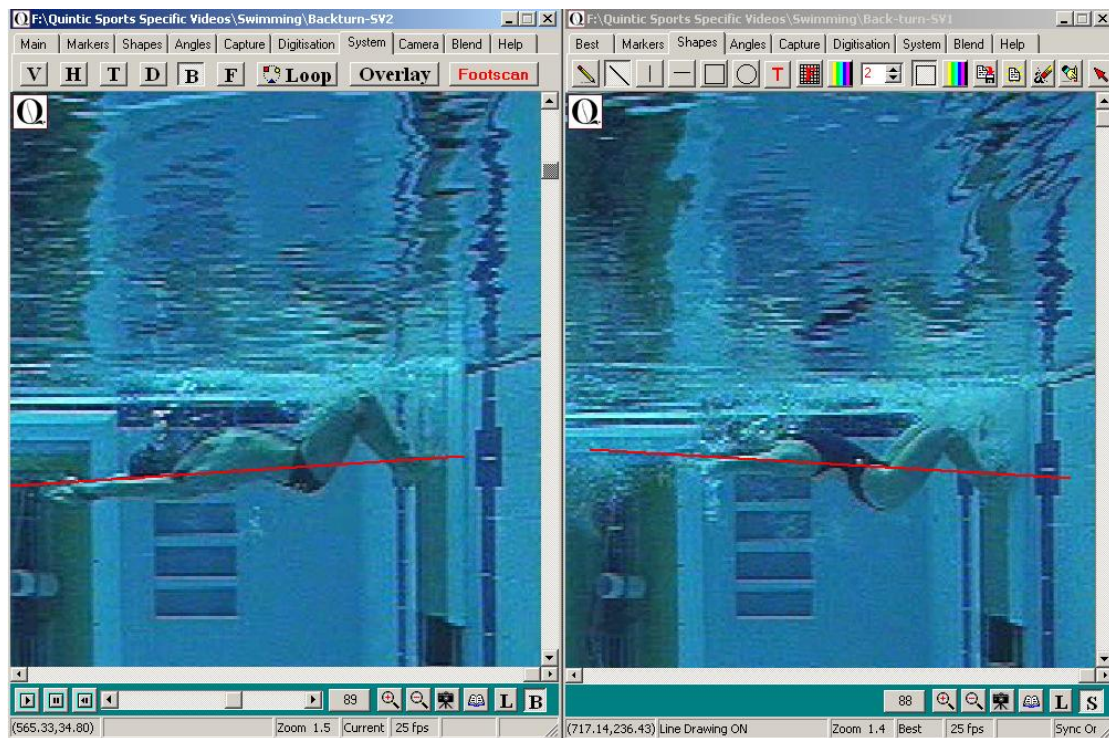
- a) Gains a lot of height from the blocks during the flight phase by throwing his arms forward and up.
- b) Keeps his hips high during flight and raises his legs before entry.
- c) Head and arms are streamlined with head tucked between arms.

The female athlete:

- a) Keeps her legs apart during the flight so is not optimally streamlined.
- b) Holds arms lower so does not gain as much distance.

### Backstroke tumble turn

(Using dual screen synchronisation function)



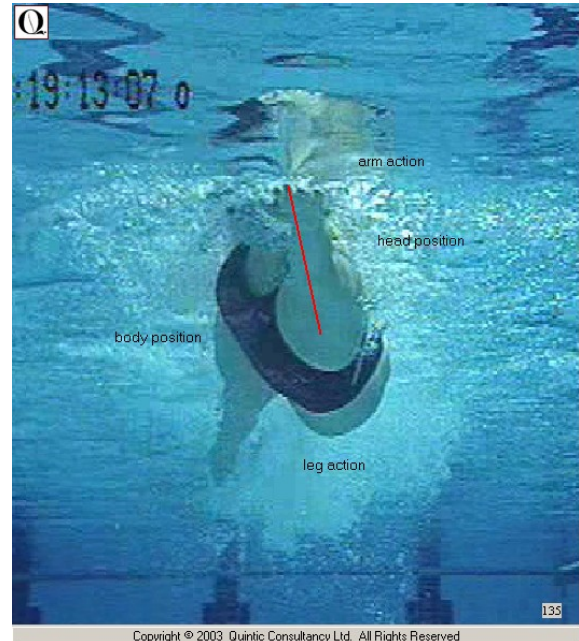
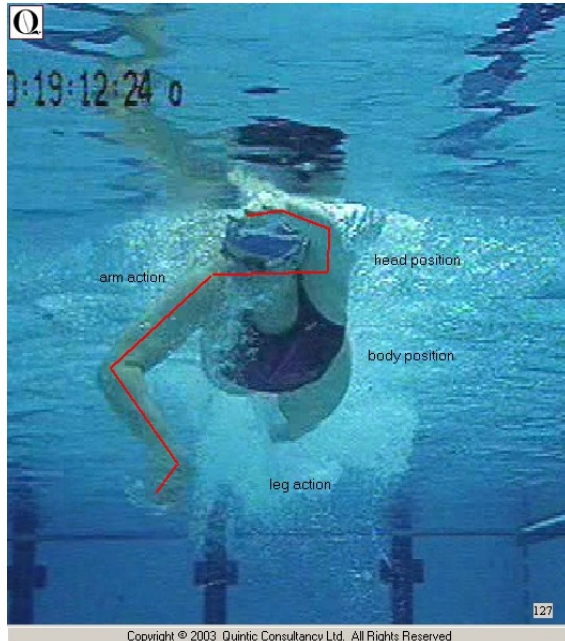
Female Swimmer:

Strengths	Weaknesses
Glides in a streamlined position with arms above head	Tumbled slightly too far away from the wall
Knees bent for maximum push off	Turned through too much of a full rotation
	Head raised and back not horizontal – therefore pushed off upwards

These strengths/weaknesses can be compared with the correct technique demonstrated by the male swimmer.

### Front crawl stroke technique

(Using single image capture function)



- **Body position** – the swimmer is in a prone position with head low in the water, legs are relaxed and extended in a streamlined position. The swimmer rolls well from side to side during each stroke.
- **Leg action** – the swimmer uses the ‘flutter kick’ action, has good ankle flexibility and knees are not too bent.
- **Arm action** – ‘S-shaped’ pull phase has good inward and outward sculling movements. The recovery is efficient with a bent arm and high shoulder; the swimmer stretches the arm out in front ready for hand entry.
- **Head and breathing** – rotates head to the side efficiently - only enough to take a breath.

### Conclusion:

Quintic Software can be used to capture, observe and evaluate video footage of the students performing their chosen sports. Analysis of their performances can be performed with ease using the wide variety of functions offered by the software. The videos can also be compared with similar skills performed by elite athletes (such as the videos shown above) taken from the vast selection in the Quintic video library.

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[www.quintic.com](http://www.quintic.com)

PO Box 2939, Coventry, West Midlands, CV7 7WH, England.

Tel: +44 (0)1676 530730 Fax: +44 (0)1676 529045 [info@quintic.com](mailto:info@quintic.com)

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