

**Assessment Schedule – 2005****Scholarship: Physical Education 93501**

Evidence	Judgement
QUESTION ONE	
<p>The candidate critically evaluates the recommendations as a positive generalisation for the population to become active while discussing the problematic nature of general recommendations for all people.</p> <p>The factors involved in critically evaluating the recommendations contained in the article include, but are not limited to:</p> <ul style="list-style-type: none"> <li>the need for a generalised recommendation that all members of society can easily relate to and implement</li> <li>a discussion that the main recommendation in the article is positive for health</li> <li>a discussion that the main recommendation in the article is one of a wider group of recommendations for physical activity</li> <li>a possible discussion of the percentages of the population in active involvement compared to those in contemplation or preparation for regular physical activity.</li> </ul> <p>Limitations of the recommendations should also be evaluated, eg:</p> <ul style="list-style-type: none"> <li>suggesting that physical activity is associated with just physical fitness for health benefits</li> <li>a discussion that physical fitness is only one aspect of hauora / well-being</li> <li>the multidimensional nature of “fitness” (health- and skill-related components / metabolic / bone density, etc.)</li> <li>a discussion relating to one general recommendation for all, irrespective of desired individual and personal outcomes / goals for physical activity</li> <li>a discussion of the diversity of conceptual outcomes for physical activity, including physical, social, mental and spiritual outcomes, either individually or any combination of the four</li> <li>a discussion of the diversity of different outcomes for physical activity, such as total hauora / well-being, aerobic fitness, muscular</li> </ul>	<p>For performance descriptor 1 ( 7,8 marks). the candidate response demonstrates depth of understanding and breadth of knowledge through a high level of sophistication across a range of factors including integration of ideas, original thinking, and fluent, logical and precise communication.</p> <p>Typical of Performance Descriptor 2. Excellent Performance (5,6 marks).</p> <p>The question is focused on examining if the candidate can critically evaluate recommendations promoting physical activity. The expectation for performance descriptor 2 is that candidate’s answer provides a reasoned argument that integrates knowledge about the relationship between exercise prescription and the desired outcomes for that physical activity.</p> <p>A critical evaluation should include:</p> <ul style="list-style-type: none"> <li>An analysis of the recommendations that clarifies if and why the recommendations may be problematic for promoting physical activity outcomes for hauora / well-being. For example, this could involve adopting a position in respect to the limitations of making generalised recommendations for the population that don’t recognise the diversity of outcomes people value from participating in or undertaking physical activity. In this respect, an athlete will have different physical activity requirements and seek different outcomes, compared with someone who exercises for socialisation.</li> <li>An evaluation of the recommendations drawing on knowledge of the relationship between physical activity and health.</li> <li>Support for the evaluation by considering how such recommendations are consistent with basic principles of training, as well as the diversity of goals and outcomes possible from participation in physical activity.</li> <li>Support for the evaluation by considering factors that influence participation in physical activity.</li> <li>Support for the evaluation drawing on candidate’s own experiences in physical activity.</li> </ul>

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<p>endurance, skilled sports performance, physical work performance, elite performance sport, weight-control, socialisation, enjoyment, recreational activities, longevity, stress management or vitality, optimal functioning for well-being, freedom from disease etc, or any combination of these outcomes</p> <ul style="list-style-type: none"> <li>• a discussion of the different recommendations for children, adolescents, and adults included in the article extract</li> <li>• a discussion of Principles of Training clearly showing how different application of the principles below develops different outcomes for physical activity: <ul style="list-style-type: none"> <li>- specificity of training</li> <li>- intensity of training</li> <li>- frequency of training</li> <li>- duration of training</li> </ul> </li> <li>• a discussion of the factors affecting participation including but not limited to: <ul style="list-style-type: none"> <li>- personal – age, gender, medical, psychological</li> <li>- behavioural – attitudes, values, expectations, motivations</li> <li>- environmental – physical, social, cultural, socio-economic, time, safety.</li> </ul> </li> </ul>	<p>The candidate must be able to both adopt a position in respect to, and critically evaluate, the recommendations for physical activity made in the quote.</p> <hr/> <p>Performance Descriptor 3. ( 3,4 marks). Sound Performance critically evaluates information to demonstrate an informed understanding of physical education, arising from both theoretical knowledge and practical application. The candidate attempts to address the question – able to apply some relevant understanding. Reasonably well organised, inconsistencies evident, superficial coverage</p> <hr/> <p>Performance Descriptor 4 ( 1,2 marks). Limited understanding relevant to the question – ideas stated, information recalled. The candidate will show some evidence of critically evaluation to demonstrate an informed understanding of physical education, arising from both theoretical knowledge and practical application.</p> <hr/> <p>Unacceptable 0 marks Blank answer or irrelevant evidence</p>
QUESTION TWO	
<p>The candidate critically evaluates the physiological responses to high-intensity physical activity.</p> <p>The sources of energy utilised by the body:</p> <ul style="list-style-type: none"> <li>• creatine phosphate <ul style="list-style-type: none"> <li>- lasts for about 10–15 seconds of maximum effort</li> </ul> </li> <li>• anaerobic glycolysis <ul style="list-style-type: none"> <li>- the process of metabolising glycogen anaerobically to produce energy and pyruvic acid – the pyruvic acid is then converted to lactic acid</li> <li>- an inability to metabolise the excess lactic acid results in its build up in muscles, which then creates fatigue and discomfort</li> </ul> </li> <li>• aerobic <ul style="list-style-type: none"> <li>- the process of energy production by way of oxidising fuels</li> </ul> </li> </ul> <p>Possible factors contributing to excess post-exercise oxygen consumption (EPOC):</p>	<p>For performance descriptor 1,( 7,8,marks ) the candidate response demonstrates a high level of sophistication across a range of factors including integration of ideas, original thinking, and fluent and precise communication.</p> <p>Typical of Performance Descriptor 2. Excellent Performance (5,6 marks).</p> <p>The question is focused on examining if the candidate can critically evaluate metabolic response during and following high-intensity exercise. The candidate's answer must provide an informed explanation of energy metabolism and EPOC ( Excess Post Exercise Oxygen Consumption) for performance descriptor 2.</p> <p>With respect to question (a), the candidate needs to identify and explain the sources of energy utilised by the body in high-intensity exercise. For performance descriptor 2, the candidate must be able to provide an adequate explanation of energy metabolism in this situation. The argument should acknowledge the interdependent nature of the energy systems of the body. For example, as the individual begins to exercise, respiratory rate, tidal volume, heart rate, stroke volume and arteriovenous oxygen difference all increase in an attempt to rapidly increase oxygen delivery to working</p>

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<ul style="list-style-type: none"> <li>• resynthesis of ATP and creatine phosphate stores</li> <li>• resynthesis of glycogen from lactate (20% of lactate accumulation)</li> <li>• oxygen resaturation of tissue water</li> <li>• oxygen resaturation of venous blood</li> <li>• oxygen resaturation of myoglobin</li> <li>• redistribution of ions within various body compartments</li> <li>• repair of damaged tissue</li> <li>• additional cardiorespiratory work</li> <li>• residual effects of hormone release and accumulation</li> <li>• increased body temperature.</li> </ul>	<p>muscles. This reflects the body's preference to work aerobically. However, this response and the production of energy through the aerobic system may be too slow and inadequate to sustain the energy output required. To cope with any instantaneous demand for energy the body utilises anaerobic forms of energy production. In a maximal effort, creatine phosphate is exhausted reasonably quickly, so the high energy output is fueled by both anaerobic glycolysis and the oxidation of glycogen (aerobic respiration).</p> <p>With respect to question (b), a critical evaluation should involve considering the possible factors that increase post-exercise oxygen consumption, and be able to integrate these into an informed argument, supported with examples from the candidate's own experiences of physical activity.</p> <p>The most common approach is to assume that extra oxygen consumed after the race represents an 'O<sub>2</sub> debt' that is used to pay back an 'O<sub>2</sub> deficit' created by the non-oxidative (anaerobic) metabolism performed during exercise. The extra oxygen consumed after exercise is thought to support, in part, the conversion of lactate into glycogen. However, it is important to also consider other possible reasons. For example, exercise causes elevation in tissue temperature, changes in intra- and extra-cellular ion concentrations, and changes in metabolite and hormone levels. Because these physiological changes persist into recovery, their effects serve to elevate oxygen consumption immediately after exercise. For performance descriptor 2, it is sufficient that the candidate provides a reasoned argument of one of these positions.</p> <hr/> <p>Performance Descriptor 3. ( 3,4 marks). Sound Performance critically evaluates information to demonstrate an informed understanding of physical education, arising from both theoretical knowledge and practical application. The candidate attempts to address the question – able to apply some relevant understanding. Reasonably well organised, inconsistencies evident, superficial coverage</p> <hr/> <p>Performance Descriptor 4 ( 1,2 marks). Limited understanding relevant to the question – ideas stated, information recalled. The candidate will show some evidence of critically evaluation to demonstrate an informed understanding of physical education, arising from both theoretical knowledge and practical application.</p> <hr/> <p>Unacceptable 0 marks Blank answer or irrelevant evidence</p>

**QUESTION THREE**

The candidate critically evaluates obesity as a trend affecting the health of people in New Zealand society. Responses should define and explain the terms, consider the problematic nature of the issue, adopt a personal position and present a reasoned argument to support the position.

The key elements that can be considered in the critical evaluation include but are not limited to:

**Definition:**

- Obesity is medically defined as an excessively high amount of body fat or adipose tissue in relation to lean body mass.
- Obesity is also defined as a BMI (body mass index) over 30 kg / m<sup>2</sup>. Patients with a BMI between 25 and 29.9 are considered overweight, but not obese.
- Measuring obesity by BMI is problematic, given that it does not compensate for variations in the composition of body mass, and that the concept of obesity, and when someone becomes obese, are both socially constructed.
- Obesity is a chronic condition that develops as a result of interaction between a person's genetic makeup and their environment. How and why obesity occurs are not well understood; however, social, behavioural, cultural, psychological, metabolic, and genetic factors are all involved.

**Obesity as a trend in New Zealand:**

- Evidence is emerging to suggest that people in the developed world are getting heavier and fatter. This trend is also observed in New Zealand. The causes and implications are still uncertain.
- The New Zealand Health Strategy 2000 has three objectives that directly relate to obesity and these are to improve nutrition, increase physical activity, and reduce obesity.
- Obesity is a social issue in the way it overlaps with and is influenced by cultural beliefs about body size, health and ideal bodies; the social stigma and negative connotations of fatness; media representation and stereotypes; attitudes and behaviour; concepts of health across the lifespan; and gender.

For performance descriptor 1 ( 7,8 marks) the candidates response demonstrates a high level of sophistication across a range of factors, including integration of ideas, original thinking, and fluent and precise communication

Typical of Performance Descriptor 2. Excellent Performance (5,6 marks).

The question is focused on examining the candidate's ability to critically evaluate a physical activity trend, especially as it relates to current beliefs about obesity. For performance descriptor 2, the candidate's response must include consideration of a range of perspectives on obesity as an epidemic and be able to provide a reasoned argument to support a position. Candidates may use different thinking tools (eg Speech, or De Bono's thinking hats) to generate perspectives and ideas.

The issue itself, that obesity is a trend that can be called an epidemic, must be seen as a complex issue that relates to how society views fatness, health, and lifestyle choice.

**A critical evaluation would include:**

- Defining and explaining the term 'obesity'.
- Considering the diversity of views expressed in the statements and discussing why the premise of an obesity epidemic may be problematic. The statements have been selected to demonstrate a diversity of views that support and problematise the notion that obesity is an epidemic affecting society.
- Adopting a position in respect to obesity as a trend in society.
- Supporting the position with a reasoned argument. This should involve being able to integrate a range of information, and demonstrating an understanding of that information, to support the points made in the argument.

<ul style="list-style-type: none"> <li>Obesity is a socioeconomic issue in the way it overlaps with and is influenced by the interests and agenda of the fitness, body image, and weight loss industries; the cost associated with good nutrition and accessing health professionals; and the costs associated with participating in leisure activities.</li> </ul> <p>Factors influencing obesity:</p> <ul style="list-style-type: none"> <li>The hormone Leptin appears to regulate adipose proliferation and modulate eating behavior.</li> <li>Heritability studies indicate that genetic factors may be responsible for up to 70% of the variation in people's weight</li> <li>Weight gain is dependent on a person's energy intake being greater than energy expenditure.</li> </ul> <p>Health risks associated with obesity:</p> <ul style="list-style-type: none"> <li>Type 2 diabetes mellitus, gallbladder disease, hypertension, hyperlipidemia, and sleep apnoea.</li> <li>Coronary artery disease, knee osteoarthritis, and gout.</li> <li>Breast, endometrial, or colon cancer; low back pain.</li> <li>Hypertension is the most common obesity-related disease.</li> <li>About 80% of people with type 2 diabetes are obese.</li> <li>Hypercholesterolemia is prevalent in obese persons, but its incidence does not increase with increasing weight class. The incidence of diabetes, osteoarthritis, and gallbladder disease increases as weight increases.</li> <li>The prevalence of cardiovascular disease is significantly elevated for the obese.</li> </ul>	<hr/> <p>Performance Descriptor 3. ( 3,4 marks). Sound Performance critically evaluates information to demonstrate an informed understanding of physical education, arising from both theoretical knowledge and practical application. The candidate attempts to address the question – able to apply some relevant understanding. Reasonably well organised, inconsistencies evident, superficial coverage</p> <hr/> <p>Performance Descriptor 4 ( 1,2 marks). Limited understanding relevant to the question – ideas stated, information recalled. The candidate will show some evidence of critically evaluation to demonstrate an informed understanding of physical education, arising from both theoretical knowledge and practical application.</p> <hr/> <p>Unacceptable 0 marks Blank answer or irrelevant evidence</p>
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**QUESTION FOUR**

The candidate critically evaluates the scenario, drawing on knowledge of related motor learning / skill acquisition factors. These may include but are not limited to:

- the nature of skill, technique, and coordinated movement
- principles of motor control and movement coordination
- information processing approach:
  - perceiving
  - deciding
  - acting
  - processing feedback
- constructivist learning approach:
  - learning is an active process
  - learning is developmental
  - learning is multi-dimensional
- the influence of context and the situated nature of skill:
  - all action is situated as unique responses to problems presented in context
  - relevance and meaningfulness to learners
  - learning is a whole-body process
- the nature of practice:
  - random vs blocked
  - variable vs constant
  - massed vs distributed
  - speed vs accuracy
- nature and quality of feedback
- stages of skill acquisition:
  - cognitive stage
  - associative stage
  - autonomous stage
- reference to relevant instructional models:
  - teaching games for understanding (TGfU)
  - games sense
  - play practice
  - sports education.

For performance descriptor 1,( 7,8,marks ) the candidate response demonstrates a high level of sophistication across a range of factors including integration of ideas, original thinking, and fluent and precise communication.

Typical of Performance Descriptor 2. Excellent Performance (5,6 marks).

The question is focused on examining if the candidate can critically evaluate the way practice conditions influence skill acquisition. For a critical evaluation, the response must analyse the practice conditions outlined in the scenario and establish a reasoned argument on how lessons should be structured.

The analysis should consider if and why the practice conditions are problematic and integrate a range of factors to support the analysis. For example, the scenario suggests that there is a lack of transfer of learning from drill to game situations. It can be argued that this relates to the specificity of practice and the teacher's use of drills to develop the skill. That is, game performance requires flexible responses, and poorly designed drills can often over-emphasise stereotypical responses. It could also be argued that skill is a complex concept that involves the ability to perceive and read relevant cues from a given situation, make appropriate decisions based on that information in relation to tactical and strategic outcomes, and effect movement patterns with technical competency. Given this, the drills the teacher has used may have only allowed practice on some components of the skill such as technical proficiency and movement coordination. A further argument that could be used in the analysis is the relationship between skill and game performance. That is, a student's ability to play the game involves not just skill, but also an understanding of the nature of the game, its rules and method of play, as well as the student's movement abilities and motivation to play.

It would also be acceptable to argue that skill development requires more time than that offered in a short series of lessons, or that the objective should not be to develop skill, but an interest in and understanding of the game. However, for performance descriptor 2, the candidate's response should also consider the nature of the practice conditions and how they influence learning.

An important point to note is that the scenario does not give any detail on the nature of the drills being used. Drills can be structured in a large variety of ways and do not necessarily provide poor practice opportunities for learners. What should be considered is the nature of practice provided by the drill and how this relates to the learners' conceptual understanding of how to perform

	<p>in the game. Teachers can structure drills so that game-like situations are structured in such a way that the learner gets to practise all aspects of the skill. However, drills can also be structured in such a way that they provide for only pre-determined responses and this then becomes problematic when the learner is embedded into the more dynamic and variable nature of the game itself.</p> <p>A reasoned argument on how the lesson could be structured must integrate a variety of factors that influence the learning of skill and be supported with relevant examples from candidates' own experiences. The argument should relate to the analysis and address the issues highlighted.</p> <hr/> <p>Performance Descriptor 3. ( 3,4 marks). Sound Performance critically evaluates information to demonstrate an informed understanding of physical education, arising from both theoretical knowledge and practical application. The candidate attempts to address the question – able to apply some relevant understanding. Reasonably well organised, inconsistencies evident, superficial coverage</p> <hr/> <p>Performance Descriptor 4 ( 1,2 marks). Limited understanding relevant to the question – ideas stated, information recalled. The candidate will show some evidence of critically evaluation to demonstrate an informed understanding of physical education, arising from both theoretical knowledge and practical application.</p> <hr/> <p>Unacceptable 0 marks Blank answer or irrelevant evidence</p>
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