

Physical Education

Advanced GCE A2 H554

Advanced Subsidiary GCE AS H154

Examiners' Reports

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Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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CONTENTS

Advanced GCE Physical Education (H554)

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EXAMINERS' REPORTS

Content	Page
Unit G451: An introduction to Physical Education	1
Unit G453: Principles and concepts across different areas of Physical Education	5

Unit G451: An introduction to Physical Education

General Comments

There is a pleasing improvement in performance on this paper with an encouraging number of scripts characterised by coherent and detailed responses, sound knowledge and understanding and excellent exam technique. On the whole, candidates answered the questions set; indeed, there was evidence of candidates 'deconstructing' questions – underlining key elements (particularly command words), for instance.

The standard of candidate responses to the (e) part-questions continues to improve with evidence that candidates are increasingly aware of the requirements of these part-questions as detailed within the generic levels descriptors. Each of the (e) part-questions included 'hooks' which seemed to help candidates structure their responses and gain marks in a progressive, orderly way. Many candidates produced simple plans and most attempted to include practical examples – with varying levels of success. Candidates should be reminded to make their knowledge points, to develop these points and also to make use of relevant practical examples wherever appropriate.

However, there is also evidence of some ineffective exam technique. Some candidates need to pay more attention to the number of marks available in each question and ensure that they offer enough distinct points – particularly on 6 mark questions. Furthermore, in instances where part-questions consisted of more than one element, some candidates failed to address all parts of the question.

Each of the three sections had part-questions where candidates scored very well, and those that proved to be more challenging. This cohort scored reasonably evenly across all three sections of the paper. There were very few rubric errors, comparatively few 'Nil Responses' to individual questions and no evidence of candidates having to deal with a lack of time.

Section A: Anatomy & Physiology

- 1 (a) (i)** This part-question was well answered with almost all candidates achieving at least one of the two marks available – the majority achieved both. The agonist muscle (gastrocnemius) was more easily accessed than the movement (plantar flexion). It was pleasing to note the number of candidates who also spelt the name of this muscle correctly.
- (a) (ii)** A significant proportion of candidates quickly scored maximum marks on this part-question. Those who were less certain of this topic often managed to identify that the muscle would '*contract with more force*' or with '*greater speed*' but then wrote about increase in heart rate and blood flow deemed irrelevant by examiners. Weaker candidates wrote about the increased '*flexibility*' of muscle, however, to be awarded Point 9, candidates needed to refer to greater 'stretch' or 'elasticity'.
- (b)** This part-question was generally well answered with a significant proportion of candidates scoring between two and four of the five marks available. It is pleasing that candidates' knowledge of, and the ability to apply, topics in the 'Motion and Movement' area of the specification is improving with every series.

In general, candidates knew that applying force 'on the side of the ball' would generate spin but very few used the specialist vocabulary ie applying force 'outside the centre of mass' or applying an 'eccentric force'. This should be encouraged within centres.

Most candidates wrote with confidence that '*linear motion was motion in a straight line*' but their understanding of linear motion was less secure. Many gave a 100m sprinter as their example. This was deemed too vague by examiners as only the head and torso of the sprinter show linear motion. Also, few candidates extended their answer to give a full description of linear motion (pt 5). Weaker candidates wrote irrelevantly about Newton's First Law or Newton's Laws in general.

(c) This part-question was poorly answered by many candidates. The majority of candidates deviated from the question and wrote about 'neural' control rather than 'intrinsic' control. Despite this, pt 3 and pt 6 were regularly accessed as these factors are relevant to both types of control. In a limited number of cases, candidates linked intrinsic control to an increase in body temperature but failed to expand on this thus failing to access Points 7 or 8 on the mark scheme.

(d) The effect of carbon monoxide on the transport of oxygen was well known and understood by most candidates with a large percentage of candidates scoring a maximum two marks here (usually for Points 2, then 4, then 1). In the second part of the question, many candidates mentioned an increase in diffusion or gaseous exchange as the outcome of exercise (on the exchange of oxygen during external respiration) but did not consider the factors that produce this outcome.

On this five-mark question two effects of carbon monoxide were asked for. This should have alerted candidates to what was required in respect of their response to the second part of the question (on gaseous exchange) – ie three distinct points.

(e) Answers to this part-question were well structured – many candidates included both a brief introduction and conclusion.

The question proved challenging, however, and was the least well answered of the (e) part-questions.

The first part of the question (which focused on asthma – both effects and methods to control the condition) was generally answered better than the second part (on the impact of endurance activities on the respiratory system).

Most candidates knew about asthma, its control and the detrimental effect on performers in endurance activities. However, answers were usually knowledge based, with only the stronger candidates developing points and thus extending their answers into a *genuine* discussion – as required.

When tackling the second part of the question (on the impact of regular endurance activities on the respiratory system), most candidates identified one or two structural changes, with stronger candidates also describing mechanical changes. A notable number of weaker candidates incorrectly and irrelevantly discussed the impact of endurance activities on the cardio-vascular rather than the respiratory system.

Unfortunately, there was little evidence of candidates using specialist vocabulary in their responses; this could perhaps be flagged up as a focus for centres in terms of their preparing candidates for the examination.

Section B: Acquiring movement skills

- 2 (a)** This part-question was very well answered with the majority of candidates able to describe both simple and complex skills and give an example of each.

A common error, however, was for candidates to describe skills on the organisation continuum (rather than the complexity continuum) by referring to the ease with which skills can be broken down into subroutines.

- (b)** Very few candidates appeared able to explain the meaning of 'response time'. Their responses were either deemed too vague by examiners or they described 'reaction time' instead of 'response time'.

Factors that affect response time were generally well known and understood though some candidates should be reminded to take account of the command word used in the question – 'explain' in this instance – and thus to do more than write a list of words (such as age, gender, height etc) which would be deemed too vague here.

A notable number of candidates were confused between whether improved response time increases (no) or decreases (yes).

- (c)** This part-question was a good discriminator; it required good examination technique in order to gain high marks. Most marks were gained for the cognitive phase of learning and it was pleasing to note that the weaker candidates were able to link visual guidance to the cognitive phase and verbal guidance to the autonomous phase.

However, while most candidates showed good knowledge of each of the three phases of learning and of the four types of guidance, a disappointingly large percentage struggled to effectively link the two (a requirement identified in the specification). The linking and application of knowledge is to be expected in some higher order questions on the G451 examination paper. A large number of lower-scoring candidates wrote detailed and accurate descriptions of the characteristics of each phase of learning but this was not asked for in the question set.

Only the best candidates were able to demonstrate progression when using the same form of guidance at more than one phase of learning (see mark scheme points 3/7/11 for progressive use of manual guidance or points 4/8/12 for progressive use of mechanical guidance).

- (d)** This part-question was among the least well answered on the paper. Thorndike's laws were seemingly not well known or understood by candidates. Surprisingly few were able to even name the three laws for Pt 1 on the mark scheme. Although some stronger responses outlined the positive effects of each law on strengthening the S-R bond, candidates tended not to offer the related negative effect (that would weaken the S-R bond).

- (e)** This part-question was well answered with the majority of candidates showing good understanding of the types of practice and linking them successfully to performance of movement skills. The Fig. on the question paper appeared to help candidates to successfully structure their answers. Again, this part-question was a good discriminator. The 'massed' and 'distributed' aspects showed greatest knowledge and understanding while the 'mental rehearsal' aspect was least well covered. Most candidates scored in Level 2 on this question: they effectively described the types of practice but often focused solely on tedium/boredom as evaluative points. When candidates failed to achieve Level 3 it was usually due to lack of critical evaluation (the command in the question). When critical evaluation of the types of practice was offered it tended to focus on the positives, which, if done well, was sufficient to access Level 3.

Section C: Socio-cultural Studies relating to participation in physical activity

- 3(a)** A significant proportion of candidates scored five or six marks on this part-question. In the first part of the question many candidates achieved the sub max of three marks.
- To score well in the second part of the question candidates needed to be specific. Weaker candidates failed to highlight the requirement of Outdoor Education for 'specialist' facilities, staff, etc or they *vaguely* described Outdoor Education as 'expensive'. Thus candidates scored less well in the second part of this question than on the first. A small number of candidates continue to state incorrectly that any activity that occurs outside (such as football or golf for example) constitutes Outdoor Education.
- (b)** This part-question proved to be challenging for candidates. With reference to origins, those who scored well knew that the game was initially a winter training game for cricketers and some knew that the game was a combination of Gaelic football and rugby. Many unsuccessfully wrote a general answer about the status/popularity of sport in Australia. On that point, the most common point achieved was the general Pt 16 with a number of candidates repeating the alternatives within it to no avail. There was a surprising number of 'Nil Responses' on this question.
- (c)** Most candidates successfully gave at least one advantage and one disadvantage of modern technological products most commonly referencing 'Hawk-Eye' and 'LZR swimsuits' as their examples. Some candidates failed to notice the command to 'use examples of specific technology to support each of your points' – thus limiting their scores. Points 1, 4, 14 and 15 were the most common answers.
- (d)(i)** Part d(i) and d(ii) of the socio-cultural section were both concerned with the organisation and administration of sport and were both poorly answered.
- In an attempt to help candidates, they were given a choice between two organisations in (d)(i) – both of which focus on sporting excellence. The former gives strategic help and the latter gives practical help to elite performers or performance. Disappointingly this choice did not seem to help – with overwhelming evidence of lack of knowledge. Most candidates incorrectly stated that UK Sport aims to increase mass participation.
- (d)(ii)** This aspect of the G451 specification has not been examined before which perhaps partly explains why candidates did not perform as well as expected. Candidates needed to explain (or give reasons for) the relatively recent move from a traditional amateur to a more professional approach to the organisation of sport in the UK. Potential correct answers included that the old system was too complicated or was not working; or that modern sport needs a more 'results driven' system – perhaps to increase participation. Those who did score, hit Pts 1 (a description of the two approaches) or 7 (the desire to improve standards).
- (e)** This final part-question was answered well with a significant minority of candidates producing a comprehensive Level 3 answer and nearly half of the cohort producing a Level 2 response. Knowledge was generally proficient with the impact of society being answered better than the impact on sport. Relevant and regular developments of key points were embedded in candidates' responses and examples were also included – which was pleasing evidence of increasing understanding of the generic levels descriptors and the requirements of (e) part-questions. The least well answered aspect of the question was (perhaps understandably) disadvantages to sport. Candidates who wrote limited answers overall offered simplistic/superficial general knowledge.

Unit G453: Principles and concepts across different areas of Physical Education

General Comments

This is the third series of the 'new' A2 specification. Although many of the candidates who sat this examination were generally well-prepared there was a significant number of candidates who were not sufficiently prepared for entry in the January series. A significant feature of the entry profile was the number of single entry centres that were clearly entering re-sit candidates – these candidates showed a wide range of ability.

This paper is wide-ranging with three different topic questions having to be chosen from the five on the paper. There were few rubric infringements with one or two candidates answering more than the three questions required. A few candidates seemed to run out of time and most of these were unable to complete one of the 20 mark (d) part-questions and, therefore, lost out on gaining valuable marks. Candidates are reminded to manage their time effectively so that an equal amount of time is spent on each topic area. There were fewer candidates who wrote too much, especially in the 20 mark (d) part-questions. This indicates that centres are being more effective this year in giving examination technique guidance when preparing candidates for the examination. Only material that is relevant and seeks to answer the question set should be included within the response to the 20 mark (d) part-questions. Centres are, again, advised to include in their schemes of learning time to practise answering questions in a reasonable time so that they are better able to manage their time when faced with the external examination.

This A2 paper is designed to test not only the knowledge and understanding related to Physical Education theory but also applied knowledge, including the ability to critically analyse and evaluate Physical Education material from the studied topic areas. The majority of candidates chose to answer the questions on Historical Studies, Sports Psychology and Exercise and Sport Physiology. Relatively few candidates attempted the Comparative Studies question and even fewer the Biomechanics question.

The quality of written communication was, overall, satisfactory with many candidates now showing more planning for the (d) part-questions. The use of technical vocabulary by many candidates was again good; reflecting effective candidate preparation by centres.

Centres are reminded that candidates should be fully prepared to give practical examples not just from sport and physical education, but also for regular exercise, a balanced diet and the avoidance of an unhealthy lifestyle.

When the 20 mark (d) part-questions contain two or more strands, it is important that candidates visit all of these strands in their answer otherwise they are unlikely to score the higher level marks. Some candidates scored very well indeed, showing good preparation and effective learning of many areas of the specification. These better candidates often made a valid point and then developed it using appropriate technical terminology and, if required, relevant practical examples. These candidates often wrote a short plan before their response and they visited all aspects of the question.

Comments on Individual Questions

Historical Studies

- 1 (a)** Many candidates had a good grasp of the 1950s teaching methodology but many did not compare these to that of the 1933 approach. When asked to compare, candidates are reminded that in response there needs to be comparisons made to score marks. Some candidates wrote about the earlier model course but had not read the question carefully enough. Many candidates did not answer the second part of this question and merely described the 1950s approach rather than give reasons as to why this approach was introduced. The best candidates scored well through their comparisons and reasons for the later approaches.
- (b)** Some candidates responded by giving a list of characteristics of mob football and did not answer the question set – they consequently scored few marks. Those candidates who explained the links between socio-cultural factors and these characteristics scored well. For many candidates this was a high scoring question with the majority also recognising that improved transport increased the number of fixtures played and the number of competitions held. The better candidates also recognised that increased transport meant rules were more standardised.
- (c)** Many candidates defined athleticism as a combination of moral integrity and physical endeavour with some candidates using their own words that showed good understanding of the concept. When the command is to 'define', candidates need not give explanations or offer analysis in their responses. Candidates generally struggled to explain the expansion of sports and games during stage three with some candidates not recognising the characteristics of stage three or giving accounts of developments clearly outside the remit of the question. Many candidates scored the mark available for describing one way in which some feel that public schools of the nineteenth century are influencing schools of today by identifying the use of house systems or that sport can be afforded high status in some schools.
- (d)** This part-question was generally well answered, although too many candidates did not address all parts of the question. Some candidates got off the point and wrote about other activities away from athletic events. The weaker candidates also did not use social class aspects in their critical analysis, with many simply writing about the way in which athletics is different today than in pre-industrial Britain.

The better candidates described community events and pedestrianism in their discussion on pre-industrial athletics. These candidates then described the changes in post industrial athletics including the creation of facilities and the increase in spectator interest. The critical analysis from these good candidates linked social class well with both participation and performance. Centres should ensure that candidates get plenty of practice answering questions which involve addressing several strands. Only those that addressed all the strands in the question are likely to enter the top level of marks for this question. Some of the better candidates also recognised that social class had less to do with participation and performance than it did historically and gave some good relevant, evaluative opinions.

Comparative Studies

This proved less popular as a choice than the Historical Studies Option.

- 1 (a)** This part-question was generally well answered with centres seemingly preparing their candidates well for this part of the specification. Some candidates did not answer the question set and merely described summer camps rather than outlining their aims. The better candidate recognised personal and social development being the main aims of such camps. The suggestions as to why summer camps are less popular were less good – many candidates reflected on the differences in climate rather than more valid reasons such as tradition and the lack of wild space or wilderness in our relatively overcrowded UK.
- (b)** This part-question was very poorly answered by many candidates. Candidates did not appear familiar with this aspect of the specification alternatively they had misunderstood the concepts involved. The better candidates competently explained the concept of stacking as the grouping or directing of ethnic groups into certain positions in sports teams. These candidates also went on to explain centrality as being a feature whereby leadership positions in sport are held by white players.
- Some candidates rescued this question by describing other social factors that impact on mass participation in both the USA and the UK. Others left this part of the question out having been seemingly stunned by the first part or they identified factors that were not deemed 'social'.
- (c)** Better candidates were well prepared for this question and could describe in-depth both the strengths and weaknesses of the AIS. Others struggled and gave vague descriptions that were based on limited understanding. Again, some candidates missed the second part of the question; others answered it well with many lauding the Australian system for developing sporting excellence. This is the comparative section and so it is expected that candidates will compare with the UK. The weaker candidates often fail to compare and, therefore, do not access the higher marks.
- (d)** This 20 mark part-question offered 'hooks' to help candidates explore their comparative knowledge. Many took this opportunity and used tradition, development and growth as headings for well constructed paragraphs. Others did not sufficiently engage with the subject matter and did not go beyond colonial influences and rarely referred to commercial aspects. The better candidates also identified relevant cultural aspects with weaker candidates either leaving this bit of the question out or sticking to geographical differences. Many candidates referred to recent knowledge of the Ashes competition as a means of explaining the rivalry between Australia and the UK. As with other 20 mark part-questions, those candidates who planned their answer well often scored well and those that could pack in lots of factual matter along with practical examples and well-founded independent opinion did well. Those who did not answer all parts of the question rarely scored well.

Sports Psychology

The sports psychology Option was one of the most popular on this paper.

- 3 (a)** For this part-question, most candidates could identify the meaning of an 'attitude'. Centres had largely prepared their candidates well for questions relating to attitudes because many could refer to the components of the triadic model in their answers. Some candidates, however, were less well-prepared and did not refer to the components identified in the specification, nor did these candidates then describe these components. Some candidates recognised that the word 'health' in the question gave them an opportunity to link attitudes to a balanced, active and healthy lifestyle. More candidates seem to be prepared to use examples that are not just sports examples and related psychology to health and well-being.
- (b)** Many candidates struggled with this part-question but scored some marks by writing generally about selective attention. Better candidates scored well by linking 'arousal' with 'attentional control'. Some applied the inverted U theory appropriately when seeking to explain the utilisation and linking the differing levels of arousal with attentional focus. Weaker candidates merely drew the 'inverted U' and did not link 'arousal' with aspects of 'attention' in their explanation.
- (c)** Most candidates scored three or more marks on this part-question. Most candidates were aware that the faulty processes included 'co-ordination' and 'motivation' aspects and the best candidates gave six separate points that might explain why a group or team under-performs. The question included a conceptual model, this time it was Steiner's model. Those models identified in the specification are likely to be used in questions as a basis for discussion. Centres are advised to ensure that candidates are fully aware of these conceptual models and can explain them using practical examples for sport and following a balanced, active and healthy lifestyle.
- (d)** This was generally a well-answered part-question with many candidates showing an in-depth knowledge of both 'cognitive' and 'somatic anxiety' management techniques. The main differentiator in this question was candidates' critical evaluation or the lack of it. Better candidates not only explained these techniques well but also included a running commentary on their usefulness or otherwise. The best candidates referred to the willingness of the performer to put these strategies into action determining their effectiveness. Other good candidates referred to individual differences such as personality helping or hindering these strategies. The weaker candidates could only draw on a narrow range of strategies and offered limited evaluation. These candidates gave few practical examples and technical terminology was rarely used. This was in contrast to the better candidates who, not only named the strategy, but then went on to explain how it is used to good effect. They also often used relevant psychological terminology and consequently scored well.

Biomechanics

Comparatively few candidates answered the Biomechanics Option questions.

- 4 (a)** In this part-question, most candidates scored some marks for their sketch but it was only the better candidates who scored well by recognising the relative positions of the fulcrum, load and effort. Many candidates could give an example of this lever system – often referring to the plantar flexion of the ankle or standing on tip-toes when shooting in basketball for instance.
- (b)** Candidates scored marks for the 'working out' element' even if the end figure was incorrect. Those who scored few or no marks for (iii), did not give an explanation but simply stated the 'motion'. Candidates should be reminded that the command 'explain' requires explanation or reasons that justify a candidate's answer.
- (i)(ii)(iii)**
- (c)** This was not answered well by candidates many of whom did not use the parallelogram law in their answer and their sketch. Better candidates did, and clearly showed the weight acting downwards and the air resistance acting opposite to the direction of motion. Better candidates then went on to explain clearly the effect of the resultant force acting on the flight path.
- (d)** Most candidates could quote from Newton's Laws and scored some marks but many did not then go on to use them to explain the relationship between impulse and the motion of the high jumper during take-off. Weaker candidates did not really address the requirements of this question. Some candidates competently explained the use of the centre of mass citing the Fosbury Flop to help them with their explanations. Many candidates did not answer the last part of the question which made it unlikely that they would score in the higher levels of the mark scheme. Better candidates recognised that the landing bed increases time of the 'decreasing' impulse on the jumper and as a result the impact forces on the body are significantly decreased. These better candidates wrote in short sentences making clear points and used accurate technical vocabulary.

Exercise and Sport Physiology

Most candidates attempted this Option and, as such, the full range of candidate abilities was demonstrated.

5 (a) In this part-question, candidates often knew the meanings of 'endothermic' and 'exothermic' reactions. Clearly under-prepared candidates had no idea and simply guessed with a surprising array of possible definitions often falling well short of that cited in the mark scheme.

Most candidates could not give an accurate example for each type of reaction, with many scoring two or three marks out of a possible four for this question.

(b) This was largely answered poorly by candidates. The descriptions by better candidates were generally good but for many, little understanding of this type of training was demonstrated. Even those who scored well with the description knew little of the physiological principle that underpins this training. The best candidates gave a comprehensive description and a detailed explanation of the momentarily over-riding of the stretch reflex.

(c) This part-question carries a maximum of six marks and many candidates scored the full six available. Candidates had been well-prepared to explain the effects of such adaptations with most choosing increased cardiac output, increased red blood cell count and increased glycogen stores in their answer.

(d) This part-question was well answered by relatively few candidates although the majority scored *some* marks. Better candidates stuck to the requirements of the question and their explanations went through the three areas identified on the graph and in the question. Poorer candidates rarely referred to these areas and the associated trends in lactate levels.

Most candidates scored better in the next part of the question and there were some excellent explanations of training methods including both continuous training or 'fartlek;' used to increase a performer's lactate threshold. Better candidates linked the training methods with appropriate physiology; the weaker candidates merely described the method without making relevant links with increases in the lactate threshold.

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