

A-LEVEL
PHYSICAL EDUCATION

7582/1 Factors affecting participation in physical activity and sport Report on the Examination

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General Comments

This is the first summer exam series since 2019 where no advanced material was provided. It is worth noting that this cohort did not sit GCSE exams and have accessed post 16 education via centre assessed grades.

The mean mark for this paper, in the region of 43.5 marks, was lower than that in 2019 which was approximately 47 marks. This may be explained by the characteristics of the cohort, as outlined above.

The mean marks for each section of the paper were approximately:

Section A = 14.5Section B = 13.5Section C = 15.5

An observation, supported by these marks, is that students appear to have managed their time more effectively in this series. Students were generally more concise, specifically addressing the question set, when answering extended response questions. This may be a contributing factor in the greater consistency of marks across the paper. The drop off in section C marks which has previously been observed in not present.

While there was little evidence of students missing out questions across the paper generally, questions 11.1 and 11.2 stand out in this regard. More than 5% and 7% of students, respectively, did not attempt an answer. The difficulty students had with these questions on psychological refractory period may have been a factor in section B having the lowest mean mark. Unlike previous series, where performance in the extended response questions has correlated with the rank difficulty of the sections, inn this series it appears to be students difficulty in answer questions 10 and 11 which have resulted in the lower mean score for section B.

As is generally the case the multiple-choice questions across the paper could be considered easy. Only questions 2 and 8 fell outside of the 0.65 to 1.00 mean mark range. Even these questions had a mean mark of 0.6 or above. All multiple-choice questions across the paper have a discrimination score below the minimum desired level of 0.35. These questions are deliberately accessible to a wider range of students, and it is not always the highest performing students who are able to access the mark available.

The main area for improvement across the paper continues to be students' ability to access AO3 marks, where they are required to analyse or evaluate. They often lack the required depth of analysis and breadth of evaluation to access higher marks on these questions. This is particularly the case in short answer AO3 questions where AO1 and AO2 content is not credited, exposing students lack of AO3.

With regards the extended response questions there was only one synoptic question on this paper, which was question 14.

Section A – Applied anatomy and physiology

Questions 1 and 2

Students found question 1 relatively easy with around three quarters of students able to identify inspiratory reserve volume as the lung volume which would be lower during exercise than at rest. This is a topic which is commonly assessed, and students appear familiar with it.

Students did not perform as well on question 2 with a mean mark of just under 0.65. This would suggest the question was more in line with the expected difficulty of a multiple-choice question, but by no means difficult (represented by a mean mark of less than 0.35). This question targeted a common misconception regarding muscle contractions during downwards movements.

Question 3

Question 3 involved the completion of a table based on movement analysis which students will be familiar with. There were two AO1 marks and two AO2 marks available. The mean mark for the question was nearly 3. 4 was the most commonly awarded mark (approximately 45% of students), followed by 2 (approximately 23.5% of students). Most students were able to access the two AO1 marks for naming the articulating bones and type of joint. Where students failed to access marks above 2 it was generally due their inability to identify the plane and axis of movement (AO2).

Question 4

Question 4 had a mean mark of just under 2. 2 marks were awarded to around 68% of students. They correctly identified that the sympathetic nervous system was responsible for increasing heart rate and the parasympathetic system for slowing it down. The remaining students were evenly split above and below this mark point. Several students referred to receptors which were not relevant to the question. Others went beyond the required description, attempting to explain how these systems work, which was not required. Those students who accessed the third mark generally did so by naming the nerves involved.

Question 5

Question 5 had a mean mark of around 0.5 reflecting how difficult students found it. Less than 1% of students were awarded 3 marks and just under 10% 2 marks. This is despite student presenting good AO1 knowledge about what EPOC is and its component parts, none of which was creditworthy.

The challenge of this question was twofold. Firstly, as has traditionally been the case, student's answers lacked the depth required to gain a mark, missing off the impact on the boxer's performance. For example, many students knew that in the one-minute breaks some PC stores would be replenished but failed to go on to explain that this would allow the boxer to continue to produce explosive punches at the start of the next round. Secondly this is a new context in which EPOC has been examined. Hopefully this will provide a basis for teachers to develop students understanding of the role of EPOC in longer duration exercise which is not continuous in nature.

Question 6

Question 6 had the highest mean mark of the three 8-mark questions on the paper at just over 3. This is likely due to similar questions, assessing these training methods in isolation, existing in previous series. The full range of marks were accessed, however over 50% of students were awarded marks in the level 2 band.

While extended response past paper questions may have helped develop students' knowledge of these topics there was also evidence of them hindering performance on this specific question. There was a view that some students were simply reproducing mark schemes they had previously seen. While this ensured a high percentage of students accessed AO1 marks, it meant a number did not answer the specific question set. They failed to reference the energy systems which the training methods would improve and apply this to road cycling, failing to access many AO2 and AO3 marks.

In their evaluation students too often mentioned the negatives of these methods when the question specially identified the need to focus on the positive impacts.

Finally, this question exposed student's misconception about the energy system continua. Many fail to appreciate that all the energy systems will be used across a road cycling race, despite this having been examined previously. Understanding that endurance races of any kind will have periods of higher demand, anaerobic work, within them, eg hill climbs in cycling, is important for the breadth and depth of their AO2 and AO3 responses. Those who did this tended to narrowly focus on the sprint finish at the end. In was also evident that some students thought the energy systems were used in order and then depleted eg the ATP-PC system was used for the first 10 seconds of the race and then couldn't be used again. Future question could target the specific specification point on the energy continuum so greater understanding of this should be developed.

Question 7

Question 7 had the lowest mean mark of the three 15-mark questions on the paper at approximately 4.5. However, it was the best discriminating question with an index score of 0.52. No student was awarded full marks, but the rest of the marking range was used. Only around 10% of students accessed level 4 and 5, with level 2 containing over a third of student's marks.

Student knowledge of the physiological measures named in the table was generally good with AO1 being where the majority of marks were awarded. Students were often then able to state which athlete would have the higher VO₂max and, as a result, would win a 1500m race, but failed to support these statements to the level required to access the higher AO2 and AO3 marks.

The best answers were those which linked each of the physiological measure directly to their impact on VO_2max . Then, in their AO3 evaluation, also showed an understanding that these physiological factors are not the only determining factor regarding who would win the race. Students who showed a breadth of evaluation, including points linked to the suitability of different muscle fibre types and the psychological factors which could impact the outcome, scored the highest marks.

Section B – Skill Acquisition

Questions 8 and 9

Question 8 had the lowest mean mark of the 6 multiple choice questions at around 0.6. Again, this question was not difficult in statistical terms, merely performing in the expected range for a multiplechoice question of between 0.35 and 0.65. This specific link between operant conditioning and trial and error learning has been credited previously, but not examined so specifically. This may have identified a gap in some students understanding of the different learning theories.

Despite being a higher demand AO2 question, students found question 9 to be easy with a mean mark of around 0.7. This is likely due to skill classifications being commonly assessed, and as such students appear familiar with it.

Questions 10.1 and 10.2

Questions 10.1 and 10.2 were a composite item examining students AO1 knowledge of negative transfer. Students mean as a % of the maximum marks available was between 40-45% on both parts. Students may have found this challenging as previous questions have tended to focus on the promotion of positive transfer, so this context may have been unfamiliar.

On 10.1 nearly 50% of students could identify one cause of negative transfer but less than 20% achieved two marks by adding a second point. This indicates a lack of breadth of knowledge. These questions also failed to discriminate well between high and low performing students suggesting other factors, such as the delivery of this content, may have played a role in student outcomes.

Questions 11.1 and 11.2

Questions 11.1 and 11.2 were a composite item examining students' knowledge and application of psychological refractory period. As highlighted in the general comments section these questions stood out due to a higher number of none attempts than across the rest of the paper. This is hard to explain as psychological refractory period is a term specifically named in the specification which has been examined before.

While around 37% were awarded the mark for 11.1 this left in the region of 63% of students who either didn't attempt the question or scored zero. Where students attempted the question, but were not credited, they often failed to identify what was being 'delayed', in that it is a delay in response to the **second** of two closely spaced stimuli. This shows the importance of students rote learning key definitions across the course. To help a facilitate this a new subject specific vocabulary resource will soon be published on the AQA website.

Despite having just done it in question 11.1 students would often start their response to 11.2 by defining or describing psychological refractory period. This suggests students are still not using the command word to identify the assessment objective being examined. There appeared to be confusion between choice reaction / Hick's law and the psychological refractory period. Choice reaction, which would increase in time as more choice were added, occurs when may stimuli are presented at the same time and a decision must be made about how to respond. The psychological refractory period occurs between two closely spaced stimuli resulting in a delay in the performer adapting to meet the demands of the second stimuli. The best answers referred to clear sorting examples such as the ball clipping the net in tennis or a sidestep / dummy / fake in a team game.

Question 12

Question 12 was the first short answer AO3 evaluate question on the paper. It had a mean mark of just over 1 with only around 3% of students achieving full marks. Despite the difficulty of this question it failed to discriminate particularly well between the higher and lower performing students. This may well be due to the importance of students being taught the skills required to answer these types of questions and not just to learn the content.

Where students failed to access marks, it was commonly due to them listing advantages and disadvantages of mechanical guidance. While these were mostly relevant to the scenario in the question, a trampolining harness, they failed to provide a positive or negative impact on performance. For example, many students knew that by using a harness the risk of injury was reduced. What they didn't go onto evaluate was that because of this the trampolinist would be more confident in attempting the somersault in the first place. The most commonly credited answer was that by using mechanical guidance the trampolinist would become over reliant on it, which would mean they could not perform the somersault without it.

The additional layer of difficulty with AO3 evaluate question is that students are required to present both sides of the argument to access full marks. 'Sub max' in the mark scheme prevented the awarding of 3 marks for 3 evaluative points supporting the use of mechanical guidance when learning a somersault in trampolining. This aspect of the question appeared to be well understood as, even though students failed to answer in the required depth, they often demonstrated breadth across positives and negatives.

Question 13

Question 13 had a mean mark only slightly lower than that of question 6, but still over 3. As with question 6 the full range of available marks was used. Over 50% of the marks awarded fell into level 2, with less than 1% of students accessing the top band.

It was evident where students possessed a good depth of knowledge of mental practice as they were able to differentiate between internal and external viewpoints. Application tended to be limited with regards how, when and when a diver could utilise mental practice. The best answers were able to evaluate in depth considering the positive impact of the effective mental practice on performance linked to concepts such as arousal levels. They also understood demonstrated an understanding of the other side of the argument. This often included points relating to mental practice being most effective for autonomous performers, as cognitive performers may not understand the movement and cannot receive feedback.

There was no credit given for the mention of other types of practice unless they were specially linked to overcoming a weakness with mental practice eg distributed practice maybe more suitable for a cognitive performer as they can received feedback from a coach which cannot be provided via mental practice alone.

Question 14

Question 14 was the only synoptic question on this paper blending information processing with arousal from paper 2, section B. The mean mark was in the region of 5.4. All of the marking range was used except from the very top mark of 15. As with the previous 15 mark question over a third of the awarded marks fell in level 2. This question did have the highest percentage of students in the

top two bands of all three of the 15 mark questions. This is pleasing as synoptic questions have proved challenging in previous series.

The best answers demonstrated a detailed knowledge of Whiting's model, especially the central mechanisms, and were able to give specific examples for basketball.

What separate the level 4 and 5 answers from the lower marked responses was their ability to blend this knowledge with an understanding of the impact over arousal would have on performance. This resulted in answers which specifically linked stages of Whiting's model to the impact of over arousal eg during the perceptual mechanism if a basketball is over aroused attention narrowing may occur meaning they do not pick up on important cues. They were then able to go on and provide specific impacts eg this may result in them not seeing an opponent close by who is then able to intercept the pass.

This is the approach required by synoptic questions, as opposed to stand alone sections on the two topics in the question. Understanding of this has undoubtedly improved over the life of this specification, and hopefully it continues to do so.

Section C – Sport and Society

Questions 15 and 16

As has been the trend over past series the section C multiple-choice questions were the easiest on the paper. This reflects the difficulty in writing challenging multiple choice questions, which require a single, clear, correct answer, when most of the content lends itself to debate and discussion.

Question 15 had a mean mark of approximately 0.8, with question 16 even easier at around 0.9. The ease of these questions result in them failing to discriminate very well between high and low achieving students.

Questions 17.1 and 17.2

Question 17 was a composite item which examined students' knowledge of social stratification. Question 17.1, which required students to define the term, resulted in less than half of the students being awarded the mark. This again supports the need for students to rote learn definitions as part of the course.

Question 17.2 had the highest mean as a percentage of the maximum mark across the paper. This was over 78%. The high accessibility of this question meant that it failed to discriminate between high and low ability students with an index score of only 0.15.

Question 18

Question 18 had a mean as a percentage of the maximum mark of around 50%. Approximately a third of students were awarded two marks for this question with roughly 20% achieving full marks.

Where students failed to access marks, they tended to state generic benefits without being specific enough to gain credit. The differences also had to have an element of comparison to be credited. Where students simply stated that 5 aside football would improve communication, with no reference to jogging alone, this was not awarded a mark.

Question 19

Question 19 was an AO3 evaluate question with a mean mark of only 1. This is despite the vast majority of students writing relatively long responses. Most answers began by defining primary and secondary socialisation which was not credited. They also tended to give examples which, again, scored no marks. One reason for this may be that students were simply repeating marks schemes which they had seen previously and were not answering the specific questions which had been set.

The best answers mirrored the language of the question to ensure they did what was required of them. They would use sentence starters such as 'Primary socialisation has a greater impact on an individual's participation in sports throughout their life because...'. This forced them to produce a response which answered the question. Knowing it was an evaluate question they would then offer one or two alternative arguments starting with 'However it could be argued that secondary socialisation has a greater impact on an individual's participation in sports throughout their life because...'. While mirroring the question wording may seem repetitive and time consuming it was worthwhile for the students who performed well on this question.

Question 20

Question 20 had the lowest mean mark of the 8 mark questions. While most marks were still awarded in level 2 the percentage for this question was higher than others, with a greater percentage in level 1 also. There appeared to be a range of causes for this lower scoring.

It was clear from student's responses that most lacked specific knowledge of the changes which had occurred in tennis since 1950. There was confusion over the time period in question with some referencing real tennis and the development of lawn tennis by the middle class. A lot of time was also spent generically explain how the challenges facing modern professional athletes without application to support it.

All the historical content in this section of the specification is required to be applied specifically to the development of three sports: association football, athletics, and tennis. Students should have a detailed understanding of the foundation of these sports, how they were rationalised, and then professionalised in the modern era. The best answers were able to reference events such as the start of the open in era in 1968 when Grand Slam tournaments allowed professionals to complete with amateurs. This was rarely evident, however, with name checking current tennis professionals the most common attempt at AO2.

A high number of students demonstrated an understanding that prize money in grand slams is now equal. While this was given limited credit, it was not the move to changing status of professional, but a range of other social factors much later in time, which have resulted in this outcome. This content would be more appropriate in responses to questions on factors affecting the emergence of elite female performers in tennis in late 20th and early 21st century.

Question 21

Question 21 had the highest mean mark of the three 15 mark questions, with students accessing all the available marks. 75% of marks were awarded in bands 2 and 3 (mark range 4-9).

Students were generally able to show a knowledge of the time period specifically linked to the factors in the question. Local authorities were the exception to this, however, with many students unaware

of what they are, mistaking them for factory owners or national governing bodies. They are listed on the specification and their impact on the development of association football, as well as tennis and athletics, should be taught.

The good answers were able to highlight specific developments relevant to the time eg steam engine and printing press. They then went on to apply these to the spread of football citing transport to fixtures and match reporting. The very best answer then went on to analyse by providing specific impacts such as the ability of team to play in national leagues or cup, which raised the standard of competition, or the creation of role models who inspired the next generation to take up the sport.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the <u>Results Statistics</u> page of the AQA Website.