

2014 Extended Investigation GA 2: Critical Thinking Test

GENERAL COMMENTS

The Extended Investigation Critical Thinking Test assesses the ability of students to produce arguments, and to analyse and assess research questions and arguments. Most students understood what was expected and performed quite well on the 2014 test.

In the test students needed to:

- respond to drag-and-drop items based on for and against arguments
- write short written arguments for and against a nominated proposition
- write short written answers to questions about research questions
- analyse and evaluate a chosen proposition about an issue
- analyse and evaluate opposing cases about an issue.

Apart from the questions about a research issue, the test was based on reasoning about debateable propositions. The following were issues used in the 2014 Critical Thinking Test.

- Sustainability
- Flat tax system
- Hunting for recreation
- The contribution of the arts to society
- Banning tobacco
- Banning dangerous dog breeds
- Genetic modification of food
- The nature and the role of government
- The Olympic Games

For the purposes of the test, debateable propositions were taken to:

- be open questions with a range of arguments for and against a conclusion
- be generally accessible rather than specialised
- be unresolved or unresolvable empirically
- allow significant conceptual analysis and reasoning
- allow judgments about value, significance and plausibility.

As always, students should be aware of the importance of time management in a timed test. The marks available for each question should be used as an indication of the amount of detail required. It is recommended that students read through the whole test before they begin answering questions.

It is important to note that this is not a literacy test. The way in which students express themselves is not directly assessed. It is always the quality of thought and explanation that is assessed.

The fundamental question underpinning this test of whether an argument is strong or weak, and explaining the basis on which a judgment is made about this issue, is difficult. Students should be provided with terms that can describe strong and weak arguments. Strong arguments endorse rationality and reason, they are cautious about emotion and they reject rhetorical manipulation.

When students were asked to explain their judgments about the quality of an argument, some offered explicit explanations that were clumsy, inappropriate or formulaic. Other students who did not offer explicit explanations of why they judged an argument to be strong or weak offered a discussion that implied a reasoning about why an argument was strong or weak. When such implicit or indirect explanations can be inferred from a student response they can be rewarded. For some students directly attempting to explain why an argument was strong or weak made the difference between a low and a high score.

Students are assessed in terms of their ability to see what is at issue, to analyse and reason about the substance of an issue, and to assess the plausibility of claims and to make plausible claims themselves. Students need to think about what is involved in such tasks, and they need to envisage and seek out comments that they would judge to be strong or weak. This can be a process of acquiring concepts and language for students, but it should be recognised that there is no formula for making such judgments.

Some students used metalanguage or jargon instead of thought related to the issue posed. The exploration of the language of argument assessment is a useful way of developing critical thinking skills, but it has to be undertaken with

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care because such language can be used in a simplistic and reductive way. In such cases metalanguage and jargon seem to take the place of real thought.

A central issue in this study is the nature and status of data and ‘facts’. What is gathered and used as data is a fundamental issue in the research activity. It should be understood that the position of data and ‘facts’ in this test is not the same as it is in the research investigation.

Some students seemed to think that the only basis for assessing an argument is as a matter of fact. This tendency is in danger of reducing analysis and evaluation of argument to no more than a distinction between opinion and fact.

This test is not about using facts to support claims. It is about arguments and reasoning supporting claims, and about evaluating the substance and plausibility of reasoning and evidence. Some students seemed to mistakenly believe that arguments must be based on facts, and they quite inappropriately fictionalised evidence for their claims, fabricating ‘facts’ as a form of argument or support for a position. This is clearly a concern and students should understand that this is not acceptable.

SPECIFIC INFORMATION

Note: Student responses reproduced in this report have not been corrected for grammar, spelling or factual information.

This report provides sample answers or an indication of what answers may have included. Unless otherwise stated, these are not intended to be exemplary or complete responses.

The statistics in this report may be subject to rounding errors resulting in a total less than 100 per cent.

Questions 1 and 2

Questions 1 and 2 were drag-and-drop items that assessed students’ ability to see how statements might be turned into arguments, and to see a dialectical relationship between different statements. Where there is an empty cell in a table, students are to ask themselves which of the statements could be inserted into the table to provide a response to the statement opposite the empty cell.

Question 1

Marks	0	1	2	3	Average
%	5	27	12	56	2.2

For	Against
The planet is at a critical point and sustainability must now take precedence over economic growth in order to avoid catastrophe.	<i>The end of the world has often been predicted in the past, but we do not know what will happen or what we will need in the future.</i>
The natural resources of Earth are finite. The current consumption of resources is unsustainable.	Natural resources have to be used carefully. The fact that they are finite does not mean they cannot be consumed.
The current economic model requiring increasing population to fuel economic growth is unsustainable.	Wealth generation need not be in conflict with sustainability. We need sustainable growth.
We all must live much simpler lives and consume fewer resources in the future.	<i>The poor want to be richer and the rich do not want to be poorer. We have to find a way to satisfy both.</i>
<i>We have to realise that true wealth is social and spiritual rather than economic and material.</i>	There are many people currently living in poverty, and such poverty is unacceptable and unsustainable.
Humans have been careless and irresponsible in the past, but we will be forced to change in the future.	History shows that humans are very resourceful. We can deal with the challenges of the future.
	We should not accept being dictated to by governments.

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Question 2

Marks	0	1	2	Average
%	16	40	44	1.3

For	Against
The less tax we have to pay, the better.	<i>Taxation gives us the community facilities that are basic in the modern world.</i>
A flat tax system encourages entrepreneurship. Discouraging the rich does not benefit the poor in the long run.	Progressive taxation is the basis of a safe, comfortable and fair community.
It is unfair and discriminatory to make some people pay more tax than others.	
We should all pay tax, but we should all pay the same tax.	The taxation system should be organised so that those with more pay the most.
<i>Taxation can be a significant disincentive to the creation of the wealth from which we all benefit.</i>	Without the positive discrimination of a progressive tax system, the rich get richer and the poor get poorer.
There is no real poverty in our society. Everyone has a chance, and people have to take responsibility and look after themselves.	

Questions 3–6

Each of Questions 3–6 asked students to explain why the argument or rebuttal was strong. This explanation was the most difficult part of these questions, and in some respects and in some cases this explanation was the most important part of the answer.

Marks were awarded according to the following descriptors.

Marks	
3	strong, well-elaborated argument
2	strong argument with limited elaboration
1	marginal argument

Question 3

Marks	0	1	2	3	Average
%	13	32	39	16	1.6

This question asked students to present a strong argument in support of the right to hunt animals for recreation and explain why they thought it was a strong argument. The following are possible answers for the argument.

- innocent recreation, hunting is not cruel (or no more cruel than commercial slaughtering)
- removes vermin
- means of obtaining food and skins

The following response is a very good consideration of the recreational hunting issue. The student offers a sound argument about the deep and global cultural significance of hunting. As the student explains, the argument is qualified and opposing arguments are rebutted. This fairly brief response covers a great deal of ground.

We should have the right to hunt animals for recreation because hunting has deep cultural significance to countries all around the world. Although today hunting is not necessary to obtain food or resources, we should have the right to hunt recreationally to preserve a hunting culture that has accumulated over hundreds of generations. Those who support a hunting ban or believe we should not have the right to hunt often argue that hunting endangers certain species and could even lead to a species' extinction, however recreational hunting is seasonal and controlled. This seasonal and controlled form of hunting ensures the safety of animal species and allows for recreational hunting to occur. We should only have the right to hunt if it is seasonal, controlled and recreational.

I think this is a strong argument because I have qualified the claim that we should have the right to hunt recreationally, acknowledged an argument brought up by hunting opposers and rebutted this argument.

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The following is an argument that is explained and elaborated, but it does not address the fundamental issue. The argument is in favour of outdoor exercise, but it does not address the issue of recreational hunting as such. Hunting may well be healthy outdoor exercise, but this is an argument for outdoor activity and it is limited justification for hunting. The issue was not a choice between hunting and indoor activities.

people should hunt animals for recreation as chasing and hunting for animals provide humans with a means of outdoor exercise that can aid in metabolism and decrease chance of vitamin D deficiency, as oppose to staying indoors hunch over a computer and contracting back and neck pains.

- the argument is strong because the premise 'provide humans with a means of outdoor exercise' is valid and supports the statement 'people should hunt animals for recreation'.
- the argument provides contrast between alternative recreation activities and pointing out the benefits of hunting whilst stating the disadvantages of alternate forms of recreation such as indoors and computers.

The following response is explained and justified well. The student does not explicitly explain why the argument is strong, but the elaboration of the argument has sufficient depth and substance.

People should be allowed to the right to hunt animals for recreation as it is a way to connect to the animals. In our present day, we just need to go buy produce and then bring it home and cook it without much thought into the animal's lives or what their days of living were like. Therefore our sense of an animal's life has become an after thought, and not much respect goes into a drum stick. Whilst if we were given the right to go out and hunt animals for recreation, we can see what their environment was like and be able to establish a deeper respect for the animal that has died for us for our plates. The right to hunt animals for recreation should be supported as we are able to feel a deeper respect for our food which has greatly diminished in our present society.

Question 4

Marks	0	1	2	3	Average
%	7	32	42	19	1.7

This question asked students to present a strong argument to support the proposition that the arts makes a great contribution to society and explain why they thought it was a strong argument. The following are possible arguments. The arts:

- are everywhere
- are fundamental
- are the essence of humanity
- are a means of cultural and spiritual expression
- enrich life and give meaning
- are an industry and contribute economically
- are enjoyable and popular – a form of recreation.

Question 5

Marks	0	1	2	3	Average
%	12	26	42	20	1.7

Students were required to rebut or challenge the proposition that the sale of tobacco should be banned and explain why the rebuttal or challenge was strong. Possible arguments included:

- prohibition doesn't work
- smoking will go underground
- makes addicts criminals
- illegality makes it attractive
- freedom of choice
- rights of the individual
- inappropriate intrusion of government.

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The following response is comprehensive and well elaborated. The argument is economic, social and legal, and the example of prohibition in the United States is pertinent and well-made.

Every year the government makes millions of dollars in revenue from taxing tobacco companies, if the sale of tobacco was banned all that would happen as has been seen time and time again is that the tobacco industry would move underground, become impossible to regulate and provide no revenue to the government. You only need to look at the prohibition era in the United States to know that the banning of common vices such as cigarettes and alcohol does not in anyway benefit society and only breeds criminals and a greater under class.

My rebuttal is strong as it draws on both an economical and a social argument, arguing that banning tobacco will reduce tax dollars while increasing crime rates and showing no real benefit to society in the banning of such a substance.

The following response is a well-elaborated example of a civil liberties argument about the banning of tobacco. A comparison is made with the damage done by alcohol, and the argument is reasonably founded on a claim to freedom of choice.

Alcohol is arguably just as, if not more so, damaging to an individual as tobacco. Yet, it has not been banned. Why? Because it is an individuals *choice* of whether they engage in utilizing this recreational drug. The law should not be able to decide for a society what unhealthy actions are allowed, and what are not. If they are to ban tobacco, then they should also call a ban on takeaway foods, alcohol, and not exercising after work. All of these things are equally as detrimental to an individuals health. If they are to ban it, then they must also ban everything that is just as harmful. The individuals knows the risks, so allow them to make the choice of whether they do so; for in this society, we have a freedom of choice.

This rebuttal is strong, for it is presented in a logical, and highly comprehensible manner. It stresses the role and freedom of an individual; a concept that is likely to appear desirable to the audience. It evokes a sense of responsibility within the audience, and makes the proposition of banning tobacco appear to be damaging to ones freedom of choice. Thus, the argument distracts the argument from tobacco, to look at it in context of the bigger picture; hence causing the issue of tobacco to appear ultimately irrelevant.

Although the articulation of the idea in the following example is rather awkward, the argument about rights and discrimination is strong.

Taking away the right for people to sell and purchase tobacco will impose on a right of already discriminated people. The sale of tobacco is restricted to adults only, these adults can only smoke in outdoor, designate areas and are shun by the majority of the community already. Taking away another right from a legal tobacco smoker will be another chance to discriminate and isolate these people further. Though some say that tobacco is harmful to inhale, the consenting adults who use these products are fully aware of the ramifications of smoking. Taking away the right for people to sell and purchase tobacco will impose on a right of already discriminated people.

The following example is a limited argument that is only justified as an emotional appeal.

Selling tobacco shouldn't be banned because selling it provides an income for many people and they could lose their job if they're unable to sell it. This means unemployment rates could go up and families could be sent into poverty.

The challenge is strong because it gives strong reasoning and appeals to peoples emotions.

The following example has a kind of reasoning in that it justifies smoking on the basis that it relaxes people, and relaxation is a good thing. The justification of the argument on the basis that it is not 'biased' or based on 'opinion' is superficial.

Tobacco in cigarettes is a form of relief for millions of people in the world. Smoking the cigarettes allows people to relax and relaxation is key to a good lifestyle. If people in society have a good lifestyle, there would be much less problems associated with stress, anger and depression. Therefore, the sale of tobacco should not be banned.

This rebuttal is strong because it is very cogent, every sentence follows on from the last sentence. All the sentences contain valid arguments that appeal to people that like to have a good, relaxed lifestyle. This deductive argument involves the arguments supporting the premise heavily which is key to a strong rebuttal. There is no biasness in the argument and no personal opinion.

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Question 6

Marks	0	1	2	3	Average
%	13	29	43	15	1.6

Students were required to rebut or challenge the proposition that dangerous dog breeds should be banned and explain why the rebuttal or challenge was strong. Possible arguments included:

- no breed is dangerous as such
- all dogs can be dangerous
- the owners, not the dogs, are the problem and the solution
- some people are hysterical about dogs
- inappropriate intrusion of government.

In some respects the following response is substantial and elaborated, but the issue was not thought through sufficiently. A dog breed is not a species, and it is not 'precious' in the sense that a species can be said to be precious. Dog breeds are created by humans and humans may choose to no longer breed them. The student makes claims about premises and intermediate conclusions, but these do not overcome the fundamental limitation of the argument. The comments about being 'generalized cautiously' and not being biased or strongly subjective have little grounding and do not add much to the response.

Every species on the earth is precious as it is unique and it possesses some characteristics that are special, thus we need to protect instead of preventing the breeding of any species. Even though dangerous dogs are threats to human beings, its uniqueness makes it valuable and distinctive from other species. If we ban their breeding, it will gradually lead to their distinction as they will have less and less offspring. It will be a great pity as there will be one less variety of species in the world. Therefore, dangerous dogs breeds should not be banned.

Why strong?

- 1) The premise that we should protect any unique species in the world is reasonable and truthful, as there are many voices like that around the world already. Another premise that banning the breeding of dangerous dogs from breeding will lead to distinction is also sufficiently supported by the logic. That makes it beyond reasonable doubt.
- 2) The argument has strong cogency. If all the premises and the intermediate conclusion that 'It will be a great pity as there will be one less variety of species in the world', it is very likely that the conclusion 'dangerous dogs breeds should not be banned' at the end should be true.
- 3) The argument is generalized cautiously, because it considers and mentions the negative sides of the dangerous dog breeds 'Even though dangerous dogs are threats to human beings...'. This makes the argument more reasonable as it is not biased and strongly subjective.

The following example is limited because it is a weak comparison between dog breeding and civil rights in America. The comparison is only explained and justified as having an emotional impact on readers.

Labelling certain dog breeds as 'dangerous' may mean that they are not suitable for domesticated lifestyles, but it does not mean that they should be banned purely for their behavioural records. If deemed too dangerous to be around people, perhaps they were genetically engineered for another lifestyle instead. The situation is similar to that of America's pre-Civil Rights Movement era, when 'coloured' people were not allowed to sit in certain areas purely for their skin tone. Do we want a repeat of this, and with animals, too?

The rebuttal is strong because it makes a comparison between the intense racism displayed before the Civil Rights Movement in America, something which many people nowadays frown upon, and the banning of dangerous dog breeds and thereby plants a seed of doubt within the reader's mind. There is also the premise that dangerous dog breeds do not have to live in domesticated lifestyles and be shunned for their dangerous records. These arguments henceforth coherently intertwine with each other and support the rebuttal of the proposition.

The following example makes a claim and draws a conclusion, but the assertion is somewhat superficial and implausible. Even if it is accepted that all dogs can be trained (whether a reputedly dangerous breed or not), it does not mean that all dogs will be so trained.

Dangerous dog breeds have been shown to be trainable and perfectly friendly household pets, there should be laws enforcing the correct and effective straining of dangerous dogs, but banning entire breeds is cruel and unjustifiable.

This argument rebuts the claims that dangerous dog breeds are a threat to our society, while also offering an alternative to decrease the damage they inflict.

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The following example is an essay rather than an answer appropriate to the question in this test. The issue is ‘framed’ and the reader ‘oriented’ in an unnecessary manner. The writer seems to be more interested in style than substance, and argues the opposite of what is required. The argument is rather simple and it is not strong. It is claimed that allowing the breeding of dangerous dogs treats the lives of dogs as more important than the lives of human beings. It claims that the issue is whether ‘children are more important than a few muts’. The student has not dealt with the issue of whether some breeds are dangerous, and the argument is in effect against all dogs. Although the student tried to say quite a lot, it is not a substantial argument, and is only justified on the basis of emotional appeal and rhetorical impact.

Almost every week, a community will hear of some kind of dangerous dog attacking an innocent; more often than not, these innocents are extremely young in age, and defenseless. So the argument remains as to why on earth we still allow the existence of such dangerous breeds. Yes, we recognise the value of these dogs lives. However, the value placed upon the lives of our own young humans is much greater than this. We cannot ignore the fact that we are endangering humans with the continued existence of these dogs. In doing so, we are saying the lives of these dogs are more important than that of humans. These dogs are incredibly harmful to individuals, and those who are lucky to escape when attacked are often left damaged physically and psychologically. At the end of the day, our community and children are more important than a few muts.

This argument is strong, as it evokes fear within the reader for their jeopardised safety. Moreover, it appeals to the audience's paternal instincts, and their desire to ensure the safety of younger generations. The argument deliberately creates a dichotomy between helpless, innocent people and dangerous muts, causing it to appear to the reader that they must choose one side. In highlighting the innocence of the humans, and deadliness of the dogs, it gives a clear indication to the audience as to what side of the argument they would be wise to take. Thus, the argument's strength is found in its ability to cause the audience to take on this logical point of view, and evokes fear for their safety if they do not do so.

Questions 7 and 8

Question 7

Marks	0	1	2	3	Average
%	17	23	30	31	1.8

Question 8

Marks	0	1	2	3	Average
%	4	16	35	45	2.2

These questions assessed the skills used in designing a research question and were related to the issues and criteria considered in the vetting of research questions in the Extended Investigation.

These judgments could involve consideration of the:

- clarity and focus of the question(s)
- substance and significance of the question(s)
- impartiality and objectivity of question(s) and the research method
- opportunities for gathering useful data
- likelihood of an answer from the research
- practicality and manageability of the research.

The marks for these questions were awarded on the following basis.

Marks	
3	clear, substantial, answerable, practical
2	clear, substantial
1	not clear or precise
0	vague, unclear, insubstantial, unanswerable, impractical

Questions 7 and 8 were generally well done by students. More students received full marks for these questions than for previous questions.

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Questions 9–11

Question 9

Marks	0	1	2	3	4	Average
%	4	21	33	30	11	2.2

Question 10

Marks	0	1	2	3	4	Average
%	7	21	38	25	9	2.1

Question 11

Marks	0	1	2	3	4	5	6	Average
%	5	11	26	25	19	12	2	2.9

These questions were concerned with the fundamental critical thinking process of analysing and assessing arguments.

In assessing the arguments offered by students, the following were considered:

- reasons stated or implied for a judgment
- support and explanation offered in terms of argument, evidence and examples for a judgment.

Rhetoric and persuasive devices are not the main focus in assessing arguments and points of view. Rhetorical emphasis is a potentially negative characteristic of what is expected to be a reasoned argument.

The following are some statements about why arguments might be judged to be strong.

Strong arguments are:

- reasonable and rational
- fair minded and moderate
- supported
- consistent, coherent
- clear
- logical and reasoned
- dispassionate or appropriately emotional
- capable of appropriate critical distance
- balanced, even-handed
- able to see different sides of an issue
- qualified
- aware of complexity
- able to make distinctions
- clear, focused and precise
- relevant
- weighing substance and plausibility
- aware of value issues and own values
- rational and reflective about values.

The process of argument assessment might be represented by the following questions.

- What are the claims?
- What substance or justification is offered for the claims?
- Which claims seem most plausible?
- Which issue has most substance?
- Which issue is most important?
- Which issue would have most impact?
- What claims and values tip the scales for me?

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The following is a high-scoring answer to Question 11, evaluating arguments about the Olympic Games. It has an overall argument about the realism of one case in contrast with the idealism of the other, which is the basis of an explanation why one case is judged to be stronger than the other. The student understands and uses one set of arguments well against the other. It is not a long answer, but it has detailed elaboration and offers pertinent examples.

The case for was more convincing because the case against is far to idealistic.

While the arguments against were based on stories of people "succeeding against the odds" and common goals, which are idealistic in their nature. Whereas, the arguments for were based on pragmatic points, such as that the cost of hosting the Games can cripple the economy and leave a state in debt. This can clearly be seen in Greece, where the state is dependant on European Union aid and hand-outs to the point of near collaps. This point contradicts the agaisnst case's argument that generations after will benefit from the infrastructure. Again, the Greeks can't enjoy the infrastructure as they have no money to stage games and suchlike.

The argument that the Games provides an opportunity for the world to share a common goal is countered greatly by the argument that the Games produce a false sense of world peace. During the Games that lasted the Cold War, Western nations acted in an agressive manner in order to upstage the Eastern Bloc. This provided not a sense of unity (as the argument against proposed), but a disunity shrowded in comradery that lasted only 2 weeks.

The arguments for also go on to state that the Olympics is really based on unpleasent competition between nations, which contradicts the against arguments of unity through sport. During the 1936 Games, the Nazi regiem in Germany aggressivly tried to beat and upstage democratic and tollerant nations such as the US and UK with their Aryan athleits and ideology.

The following response to Question 11 is focused on substantive argument but it assumes claims are facts. The use of metalanguage such as 'deductive arguments' does not seem to achieve much. The claim that the piece is 'unbiased' because 'it does not include any "I's or We's"' is superficial. These comments seem pre-prepared rather than developed from thinking about the issue and how it is best dealt with in the stimulus.

The case for the fact that the Olympic games is a waste of time and money is more convincing because:

- it shows the true facts of the Olympics that is really based on an aggressive and unpleasant competition between nations
- it appeals to saving money including the valid, deductive argument that 'it is an unjustifiable cost for some countries, which remain in debt long after the Games have been forgotten'
- every argument is backed up by solid and valid arguments that enhance the original argument, 'the olympics suggests that it is only winning that matters.'
- it makes use of rhetorical questions 'why should we spend so much money on a privileged elite?' which puts doubt in the readers minds and makes readers side with the fact that the Olympic Games is a waste of time and money
- the arguments are unbiased, it does not include any 'I's or 'We's'.
- all the arguments are deductive and quite cogent, everything makes sense