Digital society

Timezone 2

To protect the integrity of the assessments, increasing use is being made of examination variants. By using variants of the same examination, students in one part of the world will not always be responding to the same examination content as students in other parts of the world. A rigorous process is applied to ensure that the content across all variants is comparable in terms of difficulty and syllabus coverage. In addition, measures are taken during the standardisation and grade awarding processes to ensure that the final grade awarded to students is comparable.

Contents

Grade boundaries

Higher level overall

Grade:	1	2	3	4	5	6	7
Mark range:	0-15	16-31	32-43	44-53	54-62	63-72	73-100

Standard level overall

Grade:	1	2	3	4	5	6	7
Mark range:	0-13	14-28	29-40	41-52	53-61	62-73	74-100

Higher and standard level internal assessment

Grade:	1	2	3	4	5	6	7
Mark range:	0-3	4-6	7-9	10-12	13-15	16-18	19-24

Higher level paper one

Grade:	1	2	3	4	5	6	7
Mark range:	0-10	11-21	22-25	26-29	30-33	34-37	38-52

Standard level paper one

Grade:	1	2	3	4	5	6	7
Mark range:	0-6	7-13	14-18	19-22	23-25	26-29	30-40

Higher and standard level paper two

Grade:	1	2	3	4	5	6	7
Mark range:	0-3	4-6	7-9	10-12	13-14	15-17	18-24

Higher level paper three

Grade:	1	2	3	4	5	6	7
Mark range:	0-4	5-8	9-13	14-16	17-19	20-22	23-30

Higher and standard level internal assessment

The range and suitability of the work submitted

In high achieving Inquiry Projects:

- Students demonstrated an understanding of the assessment criteria for the Digital Society Inquiry Project (Digital Society Guide published from February 2022 with latest update February 2025, p.57-65). Due to the late availability of the updated Guide, Inquiry Projects were moderated considering either version of the Guide that students used (positively marked).
- Students understood that the Inquiry Project is based upon a focused inquiry question and appropriate research for the development of the Multimedia Presentation.
- These Inquiry Projects included the three required components; Inquiry Process Document (IPD), List of References and Multimedia Presentation. In many Inquiry Projects, appendices were used to provide additional evidence.
- The IPD, List of References and Appendices (when used) were submitted as one file. The Appendices included documented evidence from
    - primary research (i.e. interview details and transcript of questions and responses
    - survey results as well as information how the surveys were conducted
    - the script for the Multimedia Presentation or
    - other relevant documentation to assist the understanding of the Inquiry Project.
- The List of references included a list in an accepted format of all the resources used for the research and for the development of both the IPD and Multimedia Presentation. The use AI tools where appropriately referenced and aligned with the *IB Academic Integrity Policy*.
- The Multimedia Presentation was a thoroughly researched video documentary that addressed a focused inquiry question.

Students who were not as successful with their Inquiry Projects demonstrated a lack of understanding of the assessment criteria or some aspects of them. For example:

Inquiry Process Document (IPD)

- The IPD was not presented correctly in two sections, Criterion A and Criterion B.
- The IPD was presented as an essay that integrated Criterion A and Criterion B.
- The IPD, i.e. Criterion A and Criterion B, exceeded the 1500 word limit. Any words after the 1500 word limit are not considered.

The Multimedia Presentation

- The Multimedia Presentation exceeded 10 minutes. Any content after 10 minutes is not considered.
- The Multimedia Presentation was not well-organized, not effectively delivered, the visual content was not aligned with the audio track or inappropriate.
- It was not possible to differentiate between the content in Criterion C and Criterion D (based on either version of the Guide used).

Integrating the content of the IPD and Multimedia Presentation

- The content from Criterion A and Criterion B was included word for word in the Multimedia Presentation.
- Some students who inappropriately repeated Criterion A and Criterion B in the Multimedia Presentation mistakenly provided a conclusion in the IPD and repeated this conclusion in the Multimedia Presentation. No conclusion is required in either Criterion A or Criterion B.

Guidelines for the IPD, the List of References and appendices (where appropriate)

- For the IPD:
  - Criterion A and Criterion B together must not exceed 1500-word limit.
  - Criterion A (recommended 300 words) and Criterion B (recommended 1200 words) must be two separate sections with subdivisions in the Inquiry Process Document.
  - Citations, headings and subtitles are not included in the word count.
  - Additional research is needed beyond the 3 sources included in Criterion B.

- The List of References needs to include:
  - Secondary sources used in the Inquiry Process
    - Websites
    - Artificial Intelligence tools
    - Books
    - Periodicals
  - Primary resources used in the Inquiry Process (with evidence, where appropriate, in the appendices).
    - Interviews (primary research)
    - Surveys (primary research)
  - Software applications, tools, templates and tutorials used in the development of the Multimedia Presentation.
  - Instances where AI tools were used, an appropriate format must be used that includes the prompts that were used and the date(s).
  - All media, i.e., the content used in the Multimedia Presentation.
    - Video and image sources
    - Audio sources

- Appendices are very helpful for providing necessary evidence such as:
  - findings collected from the primary research (i.e. details from interview(s) and transcript, details from conducting a survey and the survey results)
  - the script for the Multimedia Presentation

Guidelines for the Multimedia Presentation

- The information from Criterion A needs to be integrated into the Multimedia Presentation. However, it must not be included exactly word-for-word as stated in Criterion A. The digital technology that relates to the Inquiry Question must be described.
- The information from Criterion B needs to be integrated into the Multimedia Presentation. However, it must not be included exactly word-for-word as stated in Criterion B.
- There must be clear distinctions (signposting) between the analysis and evaluation, the conclusion (Criterion C), and the emerging trends and future developments (Criterion D). The conclusion follows the analysis and evaluation in Criterion C and should have a subtitle where it begins. The Emerging trends and future developments in Criterion D must follow the conclusion and should have a title where they begin.
- Any statements or assertions in the analysis and evaluation, conclusion or the emerging trends and future developments must be supported by evidence (substantiated). On-screen references and/or audio need to be included in the Multimedia Presentation at the point of use.
- All tools, applications and content must be appropriately included in the List of references.

Student performance against each criterion

Criterion A - Inquiry focus

Requirements for this assessment criterion

The focus should be appropriate and targeted. The focus includes an Inquiry Question with an explanation of its connection to a specified and relevant real-world example as well as the course concepts, contents and contexts.

Summary of work presented:

- Most of the inquiry questions were too broad or the digital system was not clear. Some inquiry questions had a yes/no response, which made them inappropriate. Inquiry questions do not need to begin with the phrase "to what extent".

Examples of focused inquiry questions

To what extent does the use of facial recognition technology in CCTV cameras by law enforcement agencies in [name of country] impact individual privacy and freedom of expression?

How has the use of digital technology contributed to the growing problem of electronic waste (e-waste) in [name of country]?

To what extent is Elon Musk's AI technology 'Neuralink' impacting human health?

- The subheadings used in the IPD, Criterion A, were usually appropriate, identifying the inquiry question, a specific real-world example as well as the specific connections to the context(s), contents and concepts in the Guide by number and subtopic. For example, *3.7A Types of robots and autonomous technologies* specifically relates to a subtopic in the Digital Society Guide.
- The connection between the inquiry question and a specific relevant real-world example was, in most cases, described but not adequately explained. In some cases, the real-world example did not include sufficient detail and did not cite a source for the information.
- The connections between the inquiry question and relevant subtopic(s) in contexts, content and concepts were, in most cases, described but not explained.
- Some Inquiry Projects correctly referred to the specific digital society Contexts, Content and Concepts by using both the subtitle and number from the Guide.
- In some instances, there were too many topics included under the 3Cs (context(s), content, concepts), which made an explanation of each connection impossible within the word limit.
- In many cases, students wrote Criterion A and Criterion B together as a short essay, with no subheadings. There was a lack of proper separation between Criterion A and Criterion B.

Areas for further improvement

- The Inquiry Question needs to be focused and clearly/explicitly stated in Criterion A.
- The real-world example in Criterion A will, in most cases, require a cited reference for the information presented. The reference is not included in the word count.
- Digital Society terminology should be used.
- Use subheadings and bold the text to organize the information in Criterion A. Subheadings used from the Guide for Context, Content and Concepts need the number and text, for example 3.7A Types of robots and autonomous technologies. Words used in these subheadings do not count in the word count.
- Only the most relevant concepts, content and concepts that relate directly to the Inquiry Question should be included in Criterion A.
- Inquiry questions based on a local context tend to be most successful and provide opportunities for primary and secondary research as well as for collecting materials for the Multimedia Presentation.

Criterion B - Sources

Requirements for this assessment criterion

There is a thorough discussion of the claims and perspectives for each source that includes a justification for their usefulness (use) in the inquiry.

Summary of work presented

- In most Inquiry Projects, Criterion B was appropriately covered in a separate section with each of the three sources cited in the same format used in the List of references.
- In many cases, students wrote Criterion A and Criterion B as a short essay, with no separation between them, no separation between the sources, and no clear citation of the source being discussed in each part of Criterion B.
- Many students failed to include a clear justification for the usefulness of the selected sources in the inquiry, and/or failed to provide evidence of the credibility of the sources.
- Better projects presented each source with four sections (as indicated below). There was a balanced discussion of the claims and perspectives between the three sources.

Areas for further improvement

- Subheadings should be used to organize the information for each of the three sources.
- Each source should include four sections:
    - A citation.
    - A description of the content in the source (claims and perspectives).
    - The credibility of the source.
    - The justification for the source's use in the inquiry.
- No more than three sources are considered in Criterion B (so students are likely to self-penalise if they include more).
- There should be balance between the claims and perspectives of the three sources (i.e., they should not all come from a similar perspective).

Criterion C – Analysis and evaluation

Requirements for this assessment criterion

Analysis and evaluation of impacts and implications for people and communities is effective, sustained and well-supported by evidence.

Summary of work presented

- The Multimedia Presentation, for the most part, addressed the Inquiry Question and was appropriately organized.
- The digital systems were not always described before attempting to analyze and evaluate their impacts and/or implications.
- Emerging trends and future developments were mistakenly included in this criterion (prior to the Conclusion relating to the Inquiry Question).
- Some analyses were superficial and/or descriptive.
- Some analysis did not include citations at the point of use in the Multimedia Presentation.
- In many cases, the Multimedia Presentations repeated the information presented in Criterion A and Criterion B exactly as it had been presented in the Inquiry Process Document (IPD). This is not appropriate, and the student will self-penalise.
- Where students scored highly in this criterion:
    - The analysis was sustained and was followed by a relevant Conclusion.
    - Sources were properly cited at their point of use in the Multimedia Presentation.

Areas for further improvement

- The digital system(s) need to be described before attempting to analyze and evaluate their impacts and/or implications on stakeholders.
- Sources must be effectively cited at their point of use in the Multimedia Presentation.
- The text, audio, images, video or other media on each screen must be related to each other (this applies to both Criterion C and Criterion D)
- The analysis and evaluation of impacts and implications of the digital systems for people and communities must be substantiated and with citations at point of use.
- The analysis and evaluation must end with a conclusion that relates back to the Inquiry Question.
- The use of original student generated content is encouraged, for example, images taken on a cell phone, excerpts from an interview with a stakeholder or embedded video clips created by the student.

Criterion D - Emerging trends and future developments

Requirements for this assessment criterion

This criterion provides effective and well-supported insights into the inquiry focus with a thorough and substantiated discussion of emerging trends and future developments.

Summary of work presented

- Most students properly identified the emerging trends and future developments in their Multimedia Presentations. However, in many cases, it was difficult to determine the point where they began.
- In the vast majority of cases, the discussion of emerging trends and future developments were limited with little further insight into the inquiry focus.

Areas for further improvement

- This criterion requires a thorough and substantiated discussion of the emerging trends and future developments that relate to the inquiry question. Conclusions that relate to analysis and evaluation relating to the Inquiry Question should be included in Criterion C.
- Sufficient evidence, underpinned by research, needs to be provided to support the discussion.
- Sufficient time at the end of the 10 minutes needs to be allocated to discussing the emerging trends and future developments (2 to 2.5 minutes is recommended).

Criterion E - Communication

Requirements for this assessment criterion:

Communication is effective. The presentation is well-organized and coherently uses media to support understanding.

Summary of work presented

- The purpose of the Multimedia Presentation is to provide a thoroughly researched informative video documentary that addresses a focused inquiry question. Unfortunately, some students misinterpreted the requirements.
- A range of tools, applications and content that were used to create the Multimedia Presentations need to be cited. Not all were cited within the Multimedia Presentation or in the List of references.
- Some Multimedia Presentations were inappropriate as they were a mash-up of media.
- The better Inquiry Projects were developed with carefully researched and selected content.
- Most Multimedia Presentations were adequately organized.
- Some used subtitles (closed captions) and text-to-speech software to develop the audio track and to support understanding.
- Many of the presentations were slide shows. However, some had too few slides and each slide remained on the screen for 2-4 minutes. In other cases, the slides were overcrowded with information which did not aid the understanding of the topic.
- Some visual material was shown quickly without explanation. In other cases, visual material did not relate to the audio presentation; images did not correspond to the narrative and/or there were inappropriate image backgrounds or video clips.
- In some cases, in the audio:
    - The narration was very fast or not clearly spoken.
    - Background music that hindered the examiner's ability to understand the work.
- In some cases, there was inadequate on-screen referencing.

Areas for further improvement

- The Multimedia Presentation can be created using a slideshow or a video application.
- The Multimedia Presentation needs to be organized into appropriate subtopics, for example:
    - introduction with the inquiry question
    - a description of the digital system(s) and its use
    - the impacts and implications of the digital system(s) on stakeholders
    - a conclusion that relates back to the inquiry question
    - the emerging trends and future developments.
- The Inquiry Question can be used as the title for the Multimedia Presentation.
- The student must consider the purpose (a thoroughly-researched informative video documentary) and audience (an IB examiner) of the presentation.
- Effective communication can be obtained through the appropriate use of various media (text, images, audio, video, transitions, etc).
- Students should, where possible and appropriate, use content from primary sources (a reminder that when the student performs an interview used in the presentation, a transcript with an appropriate heading must be posted in the Appendix. Likewise, surveys in the Appendix must be accompanied by survey details and survey results).
- Subtitles (closed captions) should be used throughout the Multimedia Presentation to make the presentation more understandable (many examiners mother tongue is not English or Spanish).

Recommendations and guidance for the teaching of future students

Students must thoroughly understand the requirements of the Inquiry Project stated in the Digital Society guide (p57-65).

- Teachers must read the entire IA Subject Report, which summarizes the findings of the May 2025 session and provides valuable instructions to improve the quality of the Inquiry Projects.
- Teachers should submit their marks and comments on the Teacher Marks Justification form. This form can be downloaded from the Digital Society discussion forum on My IB (DP Programme Communities).
- Teachers should register for IB Professional Development workshops in Digital Society where approaches to teaching and learning for the Inquiry Project are discussed.
- Teachers are encouraged to use My IB resources for Digital Society: the discussion forum for Digital Society on DP Programme Communities and the Digital Society resources on DP Programme Resource Center (PRC). Teachers should post any questions relating to Digital Society in the discussion forum for response. Also notices of updates to Digital Society are posted in this forum. Support for the Inquiry Project will also be available on IB Exchange which will be launched 26 August 2025.
- Teachers are requested to follow the requirements stated in the Diploma Programme Assessment procedures (posted on PRC under Assessment) which is updated each year. Teachers need to consult:
    - Section C3 Coursework assessment
    - Appendix: Updates to the publication (includes Digital Society)
- Teachers must ensure their students adhere to the Academic Integrity Policy and note the newest section Appendix 6: Guidance on the use of artificial intelligence tools.

- The submission of an Inquiry Project consists of two files:
    - Inquiry Process Document (IPD), List of references, Appendices (optional) with the Teachers Marks Justification at the end.
    - The Multimedia Presentation

Details for submission are located in Diploma Programme Assessment procedures.

- Any comment or questions about the May 2025 Digital Society subject report should be posted in the My IB Digital Society discussion forum.

Overall comments for externally assessed components

The explicit integration of contexts, content and concepts is a change from the legacy ITGS course (where these connections were implicit).

The explicit integration of contexts is straightforward as they are identified in the stimulus material in SL Paper 1 and HL Paper 1 that precede the question, or the sources and/or pre-release that accompany the questions for Paper 2 and HL Paper 3. It is also straightforward for the content as this is explicitly identified in each question. However, the integration of the concepts into their extended responses raises a number of potential issues.

In some cases the students are using parentheses or underlining in an extended response to explicitly state the link to a concept such as systems, ethics or change. On a superficial level this may seem appropriate, but in reality this is not the case as the student is expected to explore issues in depth and the addition of the concept can be construed as nothing more than tokenistic.

For example, if we use the SL Paper 1 and HL Paper 1, Q3(c), "To what extent is it acceptable for a company to use synthetic digital media, such as AI-generated media and deepfakes, to promote products?", the student would be expected to discuss ethical arguments associated with the use of deepfakes such as potential misrepresentation, the use of synthetic media reduce cost and the almost instantaneous generation of news. In a well-constructed response, the connections to the concepts should be evident and there is no need to explicitly state the concept.

For the externally assessed components, each examination question will make a connection to one or more concepts and this can be seen in the markschemes where the concepts are added after each item of indicative marking content for the extended responses (i.e. questions that require the use of a markband). For example, the SL Paper 1 and HL Paper 1, Q3(c) links to expression, identity, power, space, systems and ethics. This can be seen in the excerpt from the markscheme.

Is acceptable

- Where the organisation has made it clear that the advert has used synthetic digital media (ethics, values).
- Where synthetic media is a cheaper and easier alternative to traditional media (systems).

Is not acceptable

- If the person being used as a deepfake (if this is a deepfake of a real person) has NOT given their permission - may lead to the person being deep faked being misrepresented and destroy their reputation (ethics, values, expression, identity).
- if the relationship of the person (who is used as a deep fake) to the customers is used unethically - e.g. a famous actor promoting a skin care product or a figure which appears to be a doctor giving medication advice (power, space, ethics, values).

In summary, Concepts are primarily a teaching tool to provide overarching themes that unite diverse scenarios and it is not necessary for the student to explicitly state them in extended responses. This is similar to the approach taken in Business management.

Higher level and Standard level paper one

General comments

Higher level (HL) Paper 1 and Standard level (SL) Paper 1 are separate components. However, many of the comments that apply to one component apply to the other. Given the overlap between the HL and SL papers (three out of the four SL questions also appeared on the HL paper), comments offered for SL Paper 1 should be read in conjunction with those for HL Paper 1.

In this session the three questions common to both papers were as follows:

• Question 1 **Microtransactions in gaming**

• Question 2 **Drones in Agriculture**

• Question 3 **Deepfakes used in advertising**

The comments for these common questions are included within the HL Paper 1 comments on specific questions.

The areas of the programme and examination which appeared difficult for the students

For both Paper 1s

- Many students found it difficult to express their understanding of the '3Cs'; the content, contexts and concepts, that are detailed in the guide. This was particularly evident in longer responses (SL / HL Section A part c and HL Section B). As a result, the responses were general in nature.
- Two questions in SL / HL Section A Part c, asked "To what extent is it acceptable...". Students struggled to respond to this command term.

HL Paper 1

- In Section B, most students missed including references to similar scenarios/cases and make references to the '3Cs' beyond just mentioning them without any description, analysis or connection. As a result, the average mark for the questions in Section B was below 5 marks out of 12.
- In Section B, students missed discussion and evaluation of the interventions. In Section B, students did not comprehend the demands of the question as they often responded with different viewpoints that go outside what the question is asking.
- In Section B, there is still a lack of reference to the **content, context and concepts** (the 3Cs) given in the guide. Most students were not aware of the additional demands of the HL questions.

The areas of the programme and examination in which students appeared well prepared

- On the whole, the responses were well structured with introductions, paragraphs and conclusions.
- There was a reduction the use of the 'catch-all' concept of 'hackers' being a disadvantage of all technology, that was likely due to the nature of the questions which did not lend themselves to this response.

The strengths and weaknesses of the students in the treatment of individual questions

Section A:

These questions are common to the SL Paper 1 and HL Paper 1, Section A.

The average mark for Section A, Part c questions was below 3 out of 8 marks. This was largely a result of an inability to move beyond description in response to the open-ended questions in this part of the questions.

Question 1 – Microtransactions in gaming

64% of SL students and 78% of HL students chose this question.

This question was likely popular due to the fact that it was a familiar scenario for most students. However, being so close to the issues sometimes makes it more difficult to see these issues from other perspectives. In this case, it was difficult for students to discuss the issues from the parents' point of view.

Question 1a(i)

- Typically, this question was well answered as it was a subject that was obviously familiar to most students. The image used within the paper also gave some clues to correct answers.

Question 1a(ii)

- Most students could think of at least one answer here.

Question 1a(iii)

- Many students demonstrated a poor understanding of **how** encryption works.
- Some gave reasons **why** encryption should be used or **what** effect encryption had on the data without explaining **how** encryption works.
- This question was similar to a 'give the steps' question which students typically find difficult. Rephrasing the question in this way did not seem to help students to gain more marks.

Question 1b(i)

- Most students could give an answer here, but many seemed to miss the idea that 'microtransactions' are very small amounts of money that can add up to be a large sum if not monitored.

Question 1b(ii)

- Again, most managed to give an answer here, but there were a significant group who suggested 'monitoring' children while playing games to make sure they don't overspend, was a viable solution. Students must remember that the basis of this paper is the digital aspect of societal issues, thus responses that offer a **digital** solution are usually required. This is especially true in parts a and b of this paper.

Question 1c

- Students missed the specific focus on the acceptability when games are **aimed at children**. If students had focused on this fact, they would have realised that the only acceptable use of microtransactions would be by mitigating or solving some of the issues with the unacceptability. For example, it would be unacceptable to allow children to spend money unless the game asked for authorisation by an adult for every transaction.

- Students did not understand that the fact that the gaming companies make money, does not make the practice of targeting children with micro-transactions an acceptable practice.
- Some students tried to bring in detailed descriptions relating to advantages and disadvantages of cryptocurrencies, which was not successful since the question only had to do with the acceptability of asking for payment, and not the method of payment.

Question 2 – Drones in Agriculture

66% of SL students and 81% of HL students chose this question.

Question 2a(i)

- On average, students could name two sensors (input devices). This should have been an easy three marks, as students should be familiar with input (sensor) and output (actuator) devices that occur on robotic devices such as the drones in this question. There were far too many students who lost marks here by giving vague answers such as 'weather sensors'. When asked to name a sensor, we expect a specific sensor such as temperature, wind direction or humidity (in the case of weather).
- Some students named sensors that were not applicable to the scenario. For example, a microphone would not be required on an agricultural drone.
- A motion sensor is used to detect the motion of an object other than the one that the sensor is attached to. Too many explained this sensor as detecting the motion of the drone itself.

Question 2a(ii)

- Students found that identifying **two items** of data difficult in some cases. This may be because there is not a good understanding of the difference between data and information. Some students gave answers about the information that could be provided using the data, such as 'weather conditions' instead of the actual data **items**, such as 'temperature' or 'wind direction'.
- Some students thought that soil pH would be collected by a drone. Either these students would not realise that drones fly, or had not been able to apply their knowledge of sensors to the scenario.
- Examiners marked positively on this question, and the answers on the markscheme should not be taken as an indication of what would be considered as valid responses in future examinations. The markscheme shows the most common responses and is not an exhaustive list.

Question 2b(i)

- Students must remember to give the advantage / disadvantage where this is asked for and not stop at giving a feature of the device or system. Here, the question asked for an advantage to the farmer being able to control the drone. Some students gave answers such as "The farmer would be able to focus more on one area or plant than another". This response is worth one mark as the advantage of doing this is not stated.
- In addition, by its nature, an advantage / disadvantage is always comparative, and in this specific question a comparison between remote control and the autonomous operation of the drone was required. Students often gave reasons such as "The drone could give different areas different amounts of spray". While this is true, this could also be achieved with an autonomous drone and therefore was not a valid advantage of remote control.

Question 2b(ii)

- Students struggled to apply what they knew about open-source software (OSS) to the case of a farming drone. There was a widespread view that the path taken by the drone would be entered as part of the source code, rather than a setting of, or input into, the software of the drone. Also, many students failed to realise that the farmer would likely not need access to the source code but rather that the ability to do so might be advantageous to a software developer employed by the farmer.
- Some students gave answers that were not specific to OSS but applied to any software. For example, some gave the answer that the software could be updated to improve the function of the drone.

Question 2c

- It was not necessary to have existing knowledge of drones used in agriculture, instead it is the application of drones to a specified scenario. Even though part a of the question pointed students towards the use of sensors on the drone (an essential part of a robotic system and part of the syllabus), students did not make the connection to the drone's software being able to use these sensors to make decisions about where to focus their spraying attention.
- Some students misunderstood the scenario and assumed that the drones would be spraying water, rather than chemical pesticides, fungicides and fertilisers. Although the marking took this into account and did not penalise students for making reference to 'watering', the misunderstanding did result in fewer opportunities to make valid points.
- Very few noted that drones would be able to get close to plants and spray individual plants and that this, in turn, would avoid wasting the spray.

Question 3 – Deepfakes used in advertising

Only 37% of SL students and 40% of HL students opted for this question, making this the least popular HL question.

Question 3a(i)

- Many students seemed to struggle with the term "synthetic digital media", even though this term appears in Topic 3.5 of the subject guide.

Question 3a(ii)

- Students also found it difficult to identify "types" and "characteristics" of synthetic digital media and sometimes simply gave "examples" or "features" of media instead. Students must be taught to distinguish between these words in their responses to questions. Having said that, examiners are expected to mark positively as many students are not working in their mother tongue.

Question 3a(iii)

- Students also found this question more straight forward than the two other part a questions. This may be as a result of having created and worked with avatars.

Question 3b(i)

- Some students were not able to show an understanding of the term 'uncanny valley' even though this terminology is in Topic 3.7 of the guide.
- This question asked students to "Explain **one** reason why". Many students managed to define the term 'uncanny valley' but few could give a reason why developers might want to avoid this in the situation given. In other words, they could not identify the negative consequences of the uncanny valley effect.

Question 3b(ii)

- Many students found this question easy and scored well.
- A few used the term 'cancel culture' as part of their answer, but did not define what the term meant.

Question 3 b(iii)

- This question proved to be a little more difficult for some students, probably because most chose to focus on the fact that a social media influencer might charge money and this was perceived as a disadvantage. While this is true, students failed to see that any advertising or promotion of a product will cost money and did not focus on the specific disadvantages associated with social media influencers.

Question 3c

- As with question 1c, this question dealt with the acceptability of using synthetic digital media and students tended to veer off course by rather considering the advantages and disadvantages of synthetic digital media.

Section B

Question 4 Wearable devices in healthcare

This was the most popular question of this section where 89% of the students choose this question. Most of the students were able to identify the benefits of tracking, data analysis and challenges such as data integrity, access and usage.

Question 5 Smart meters and climate change

The highest mark for this question was 9 as the relationship to home tech management is farther away for students.

Students performed less well on Question 5 than Question 4.

Recommendations and guidance for the teaching of future students for HL Paper 1, Section A

Please see SL Paper 1 comments.

Recommendations and guidance for the teaching of future student for HL Paper 1, Section B

Please also see the comments that refer to HL Paper 1, Section A in the SL Paper 1 section.

- Response organization talks about the use of complete paragraphs to organize their claims, another for the counterclaims, analysis and evaluative conclusion.
- Introduction is to synthesise the demands of the question AND to imply how the response will address the claims and counterclaims with additional information.
- Introduction must not be a simple summary or repetition of the question.
- Students should always look to make connections with the 3Cs AND justify their claims and counterclaims.
- The conclusion must be evaluative and not just a simple summary.
- A reference to similar scenarios should be included

Standard level paper one

The areas of the programme and examination which appeared difficult for the students

Given the overlap between the HL and SL papers (three out of the four SL questions also appeared on the HL paper), the comments and suggestions detailed in the HL section also apply to the SL paper.

For the SL-only question, students seemed to have very little technical understanding of how the internet and cloud computing works. This led to vague discussions about what the responsibilities of the cloud computing companies and government were to provide universal internet access.

The areas of the programme and examination in which students appeared well prepared

Comments relating to questions 1-3 are contained in the higher-level paper one section of this report.

For the SL only question, students did seem to have some ideas about the environmental impacts of computing which were applicable in part 4b.

The strengths and weaknesses of the students in the treatment of individual questions

In this session there were three questions that were common to both papers. They were as follows:

- Question 1 – Microtransactions in gaming
- Question 2 – Drones in Agriculture
- Question 3 – Deepfakes used in advertising

The comments for these common questions are included within Section A of the HL Paper 1 comments on specific questions.

In the SL paper, roughly two-thirds of the candidates chose to answer questions 1 or 2, and one third of candidates chose questions 3 or 4. The students performed better on average on Question 2.

Question 4 Undersea cables and the digital divide

Only 28% of SL students opted for this question, making this the least popular SL question.

Question 4a(i)

- Some students gave two similar answers e.g. computer and laptop; modem and router etc. Students should be made aware that they will not be awarded a mark for answers that are very similar. Instead, they should try to think a little more broadly in questions where there may be multiple answers and ensure they are as different as possible.

Question 4a(ii)

- The difference between the world wide web and the internet was not well understood. This made it difficult for some students to give two examples of services on the internet as they tended towards giving two types of web pages.

Question 4a(iii)

- Some students seemed confused about what characterises 'cloud computing'. A few thought cloud computer was wireless, others conflated cloud computing and cloud storage.

Question 4b(i)

- The issues around the power use of data centers is an issue that is central to a digital society, and some students seemed unaware of them.
- Many students used the phrase 'carbon footprint' as an explanation of an environmental impact. "Carbon footprint" and "environmental impact" are synonymous terms, and the question was to explain the environmental impact of a data centre. Students who simply said that data centres have large carbon footprints, did not fully answer the question.
- A small number of students misinterpreted 'environmental impacts' to mean impacts related to the social or built environment, rather than the natural environment.

Question 4b(ii)

- Getting rid of the data centers or pulling up all the undersea cables is not a solution to the environmental issues of cloud storage.
- Reducing the amount of data stored in order to reduce the hardware (servers) used is not a viable solution, as the cloud computing companies make their money off saving people's data and if they didn't save the data, then they would have no purpose.

Question 4c

- Students were not very well informed about how the Internet works. Students should be exposed to materials about the infrastructure of the internet and the issues around net neutrality to answer similar questions in the future.

Recommendations and guidance for the teaching of future students for SL and HL Section A

The 3Cs

- We seem to have lost two of the 3Cs.
    - In the previous session, the students followed the example of the sample materials and tended towards placing the content, context or concepts (the 3Cs) terminology in brackets after each answer or paragraph. This was less evident in the current exam session, but is no longer a concern (see overall comments about the externally assessed components).
    - However, instead of incorporating the terminology into their responses as we had hoped they would do, students left it out altogether and made little reference to this terminology. This is a huge concern as students were left without any definitive ideas that relate to the subject.
    - Students should understand that to achieve higher marks in part c of the questions they need to make references to Digital Society content and contexts which are relevant to the answer, as well as make references to the stimulus material and/or to real-world examples that will add value to the response.
- Catch-all responses, such as commenting on the "over-reliance on technology" were still used by some students, although there seemed to be fewer references to "hacking" than in previous papers.

Structure of responses

- Most students structured their responses for part c well with an introduction, several paragraphs and a conclusion. There were fewer lists given in responses. This helped to organise their argument and made responses much easier to mark. The aspect that was most often missing from this structure was analysis and synthesis of ideas (i.e. depth).

Command terms and depth of analysis

- Students need to be taught how to develop their ideas and incorporate enough detail. In particular, students struggle to analyze the issues presented by the questions. Analysis requires that the students go beyond [superficial] description, i.e., add depth to the response.
- There were two questions in Section A that required students to comment on whether a practice was 'acceptable'. Students found it difficult to address acceptability and tended towards giving advantages and disadvantages. Markers were generous, particularly in the SL paper.

Examination technique

- Teachers are reminded to familiarise students with the technical aspects of the paper, including the fact that each question has various sub-questions and that two questions must be chosen from the four presented (in the SL paper). It does not advantage a student to respond to more than two questions, as there will not be enough time to answer more than two questions with enough depth in the time allocated (and the student will invariably self-penalise).
- Students need to be taught how to respond to the various command terms. Students sometimes give answers that are off course simply because they have not understood what the question is asking for. Practising with different kinds of questions can help students to improve their ability to correctly interpret questions.
- Students should spend time reading the questions carefully to ensure they answer the question that is being asked, and that their response is applicable to the context described in the question rather than a generic response that does not address the context.
- Teachers are reminded that this is not a source-based paper, and therefore the answers to the questions are not contained within the scenarios given in the paper. Paper 1 tests the student's ability to apply their knowledge of the digital world and the issues that arise in the specified scenarios. Students are required to apply their knowledge of the content, context and concepts in order to answer the questions.
- There was a pleasing increase in the number of students who referenced examples from their own knowledge; however, most students did not give any indication of the source of this information, or used very personal examples, and this made it difficult to corroborate. Additionally, some students fabricated examples, which caused unnecessary work for the examiner to track down a source that did not exist.

Terminology

- Students need to be familiar with the terminology used in the guide. Similarly, students should not assume that the DS textbook contains all material for the subject as additional examples will occur during the life cycle of the textbook. Teachers will need to supplement the textbook with their own materials, resources and examples.
- There was a marked lack of technical knowledge about digital technologies among students taking this paper. Even though this paper falls into Group 3, there is a knowledge base around digital technology that must be understood by students. There was, in general, a very superficial understanding of networking and the Internet and in particular cloud computing. Cryptocurrency was also not well understood. Knowledge around AI technologies seemed a little more secure, although there were not many technical questions asked about AI in this paper.
- SL students struggled to answer the question about drones and the technologies used in drones. This is surprising given that the questions about robots asked in previous exam papers have been similar (i.e. the students were unable to apply their knowledge). Teachers are advised to expose their students to various digital technologies and to ensure that their students can explain both the technical aspects of and the impacts that the technologies might have on various stakeholders.
- Students should be familiar with different types of software licensing and media copyright agreements, and the implications that these licences or agreements have for both the users of the software or media and program developers or media creators.

Higher and standard level paper two

General comments

General comments

Higher level and standard level paper two consisted of four questions linked to source materials provided in the examination.

The questions are common for both higher and standard level.

The areas of the programme and examination which appeared difficult for the students

For some students a lack of basic definitions and understanding of elements of the syllabus areas was evident.

Question 1 should have been straight forward, but many students were unable to identify suitable security measures.

In Question 2 it was also evident that the students' knowledge of the technical aspects of the digital society course and the terminology associated with it was insecure. In Question 2b some students struggled to present a potential impact, which could have been either positive or negative and then show the development for the second mark.

Questions 3 and 4 provided the students with an opportunity to gather some more straight-forward marks in the lower-level descriptors. While some students demonstrated a richer depth of understanding and were able to describe the implications, impacts, opportunities and dilemmas, only the top students were able to link these explicitly to the content, contexts and concepts of the digital society course.

In Question 4, there was blurring between implications, impacts, opportunities and dilemmas. This also led to some students reusing responses from Question 3 in Question 4.

Many students did not fully understand or apply the command terms correctly. Question 3, in particular, the command terms Compare and Contrast, were approached with a summary of sources in isolation rather than using the sources together (whereas, while…).

In Question 4, many of the students were able to refer to all the sources and provide evidence of their own knowledge. However, a characteristic of students in the lower mark bands was they only addressed only one or two of the sources, usually Source C and Source D.

Students who addressed the impacts and implications of adopting the hybrid working model without specific reference to MMDA and provided a generic description or discussion were unlikely to score highly in this question.

In a similar vein to previous reports the conclusion in Question 4 was often a simple summary rather than a concluding statement. Students who scored highly were able to bring together the concepts, context and content of the response.

The areas of the programme and examination in which students appeared well prepared

Well prepared students demonstrated understanding of the content, context and concepts (the 3Cs) of the digital society course.

These students scored well in Question 1 and Question 2.

In Question 1 they had a secure knowledge of data and network security and in Question 2 could understand the rationale for control of software within an organisation. However, few made mention of copyright and licencing as potential impacts.

In Question 3, well-prepared student were able to compare and contrast the testimonials of employees (Source C) and the guidelines for hybrid work from the company (Source D). They were secure in their understanding of the command term "compare and contrast". They were balanced in their use of both sources and often built on the compare/contrast description with elaborating comments.

In Question 4, the well-prepared students explicitly referred to all four sources and was able to provide their own pertinent and relevant knowledge to support this information. They were often able to state the relevant concepts; change, power, space and ethics. They were also able to link the response to economic, health, and social contexts. Some students underlined the links to pertinent areas of the "3C's". The well-prepared students were also able to present and evaluate a range of impacts and implications. Conclusions were insightful rather than a simple summary.

The strengths and weaknesses of the students in the treatment of individual questions

Question 1

Students with a secure understanding of the syllabus content score well in this question. Students within insecure knowledge would propose storage methodologies, like cloud storage, rather than considering mechanisms for security.

Question 2

Students with a rich understanding of organisations and digital operations were able to score were able to suggest a reason and impact, which they then developed for the second mark.

Students who presented multiple reasons or impacts with or without development only had their first considered.

Question 3

Students who struggle with this question made a series of statements from each sources without direct comparison (similarities) or contrast (differences)

Students who did well approached this question in a systematic manner. They drew points from sources C and D and described the similarities or differences. This was often indicated by their use of comparative vocabulary like whereas, whilst, however, in contrast etc.

Question 4

Students who did not use all of the sources and their own knowledge struggled to reach the upper level descriptors. The students who scored poorly, limited themselves to using one or two sources and were unable to present anything more than superficial evaluative comments. The lower scoring students were unable to link their response to the 3C's or were unbalanced in presenting either impacts or implications. Some poor score students would focus on some experiences like covid to the detriment the critical points presented in the scenario. Some students did present their own material beyond the sources that lacked relevance to the question.

High scoring students were able to make continuous evaluative comments and integrate them from the sources. Students who reached the upper level descriptors had a structured approach in their responses. They were able present a range of opportunities and dilemmas with clear links to all four sources, pertinent other examples and the 3C's (concepts, content and context).

High scoring students presented valid conclusions that tied together the different aspects of their responses in a coherent manner.

Recommendations and guidance for the teaching of future students

- Students need to understand how to compare and contrast between Source C and Source D. The response should include connecting words such as 'whereas', 'likewise' and 'however'.
- The integration of the 3Cs (concepts, content and context) is critical to the extended response for Question 4. Responses should, where possible, also include reference to material that goes beyond the sources provided.
- Students should be able to synthesize the information in the sources and from their own knowledge to develop a coherent response.

Higher level paper three

General comments

The focus of the pre-release was the use of a data-driven approach to screening applicants. This topic gave students an opportunity to research two interventions used in screening applicants for a range of scenarios from prospective students for university or internships to employees for paid or voluntary work. The likelihood of students applying to university or for part-time work was high, leading to many schools being able to approach careers and university counsellors or even school recruitment officers for primary research. In addition, many students were able to experience firsthand applicant screening whether it be for university application or work experience. In addition, many of the students were able to access secondary research for this paper with some well-known examples being described within responses on the scripts.

The areas of the programme and examination which appeared difficult for the students

Many students were not always able to provide adequate explanations to questions to score full marks in question 2. For example, students often had a superficial understanding of how AI works but lacked a full understanding in order to explain why a large amount of training data would be needed. Additionally, students were not always able to give a full explanation of the reasons why suitable students would be rejected.

For Question 3 many students did not read the question carefully resulting in a range of responses that frequently did not answer the question given.

Students appeared less informed about the process of converting personal attributes into a series of data points, despite this being explicitly written in the second intervention in the pre-release. Many students applied the use of data points for intervention 1 only, without considering how this might apply to the second intervention described in source B. This resulted in many students not scoring highly in Question 3.

In addition, students found it difficult to demonstrate meaningful connections to the 3Cs as related to data-driven application screening and apply their response in the context of the scenario.

Question 4 gave students the opportunity to use their research about the two interventions in the pre-release and make a recommendation. The research allowed for students to create ready-made responses, which some students were able to rewrite in the examination. However, this generic approach limited the candidate's ability to score highly as responses were not then applied to the scenario in the sources. In addition, not all students used the evaluation framework from the guide and were unable to make trade-offs between the pros and cons between and within the interventions when using the evaluation framework.

The areas of the programme and examination in which students appeared well prepared

Many students appeared to have good knowledge of the range of data collected by universities.

For Time Zone 2 many students had good knowledge of the difference between qualitative and quantitative data which is pleasing since it was explicitly listed in the pre-release under 'Additional terminology'.

Many students were able to interpret the decision tree represented in Question 2a and provide reasons why students were rejected, however, the responses were not always then related to why the candidate was suitable and rejected.

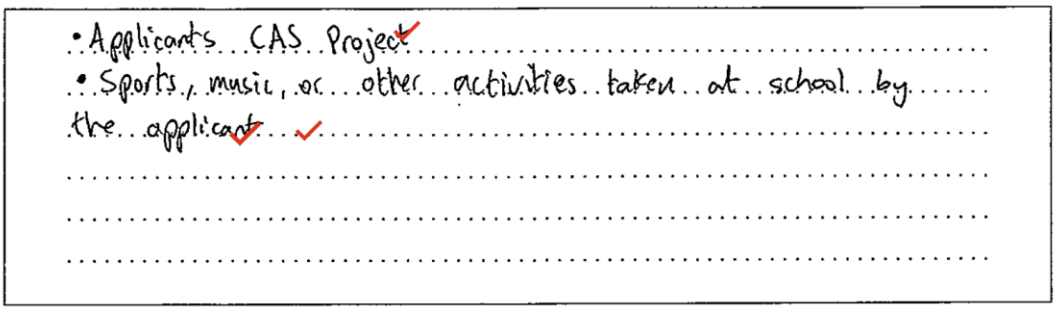
Many students appeared well prepared to write about the pros and cons of each intervention, showing that they had conducted research and were able to incorporate these as supporting examples in their extended responses. Some students were able to provide real-world examples of scenarios e.g. Amazon and HireVue for examples of AI bias issues or the use of organisations such as UCAS using a rule-based approach.

The strengths and weaknesses of the students in the treatment of individual questions

Question 1

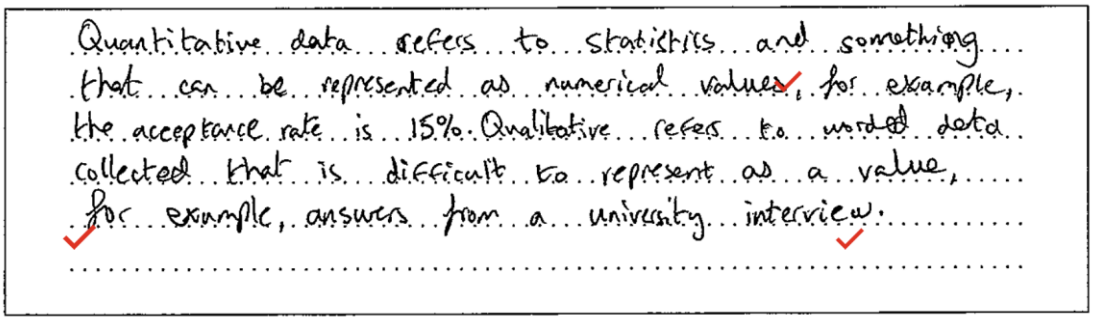
1 a) On the whole, this question was answered well by most students, frequently scoring 2 out of 2 marks. There was a wide range of examples on the mark scheme and further examples if used by universities were accepted. Some students even used examples given in Source C as their response.

The command term 'identify', means students can give brief responses that can consist of single sentences (as the example demonstrates), or as a bullet point list. Some students copied out the question before writing the response e.g. Two other examples of data points that could be used are …… This is not necessary and should be avoided to save time. The example below shows a good structure to the question.



1 b) Many students also scored well in this question, having a good understanding that qualitative data often included words or were non-numerical, whereas quantitative data was represented by numbers or could be measured. Examples to demonstrate knowledge of the differences were also accepted as a correct answer. However, some students incorrectly explained the difference focusing on how good the data was e.g. the quality of the data and how much of the data there was e.g. the quantity of data.

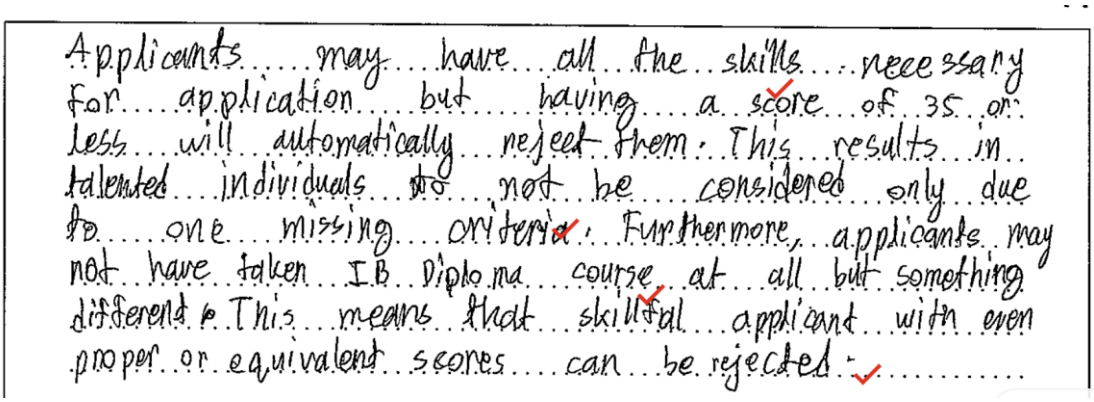
Example Script



Question 2

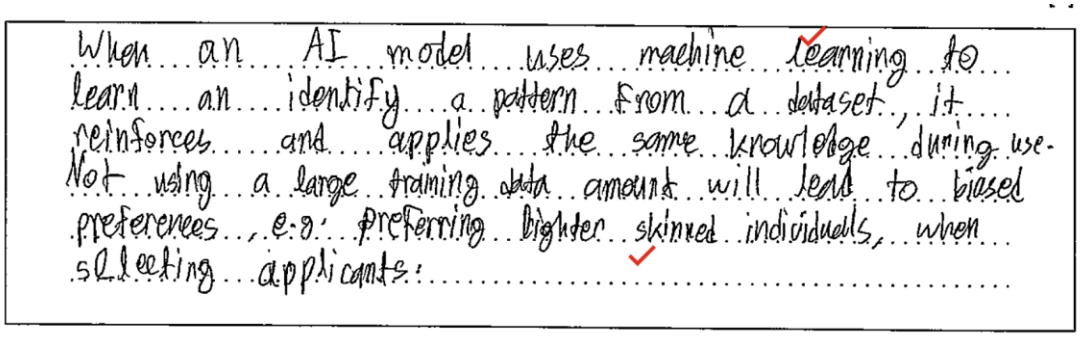
Many students were able to correctly interpret the decision tree and suggest reasons why a candidate would be rejected. Popular reasons were given, such as, it did not include personal pursuits; or the level of difficulty of the different subjects; or that applicants might not have been enrolled in the IB Diploma course. However, to score full marks in this question, students needed to explain why the candidate was suitable and rejected.

Example of a 4-mark response:


Applicants may have all the skills necessary for application but having a score of 35 or less will automatically reject them. This results in talented individuals to not be considered only due to one missing criteria. Furthermore, applicants may not have taken IB Diploma course at all but something different. This means that skillful applicant with even proper or equivalent scores can be rejected.

2 b) It was clear from reading the responses, that many students understood the use of training data in an AI model, with many correct references to concerns of bias or accuracy. However, to score full marks in this response students needed to show an understanding of the size of the data set used and it's relation to the concern; or an understanding of the role that data sets have when making decisions. Students with a good understanding of the AI technology were able to score full marks in this question.

Example of 2-mark response:


When an AI model uses machine learning to learn an identify a pattern from a dataset, it reinforces and applies the same knowledge during use. Not using a large training data amount will lead to biased preferences, e.g. preferring lighter skinned individuals, when selecting applicants.

Question 3

To answer this question students needed to focus their response on how the applicants attributes could be converted into data points and the issues or concerns related to this; what these data points represent and whether they were being used in an acceptable manner. The question was not looking at whether the data should be collected in the first place or how it was being secured.

Many students did not score highly in this question because they did not answer the question directly either focusing too much on the ethics of the personal attributes or the interventions. Also, many students did not focus on the 'acceptability' of representing an applicant's attributes to be represented by a series of data points and instead focused on the advantages and disadvantages.

Additionally, students were required to make connections between the 3Cs (concepts, contents, context), incorporate their independent research and apply their writing in context of the sources. It was very rare to see all these elements in a script. The concepts 'values and ethics' and ' identity' were used by some students but often not explicitly.

Limited responses were either brief and lacked detail or had much of the response not answering the question.

Partial/Some responses included those that were mainly descriptive (ie describing the impact), or partial with a few (2-3) arguments supporting acceptability. In this mark-band, responses mostly focused on the attributes rather than the data points but may have had some supporting examples demonstrating that they understood how data points were being used, and sometimes had an unsupported conclusion.

Adequate responses were relevant, well organized & analytical. These responses had structure and organized thoughts and included more explicit references to the scenario or supporting examples. There were more valid arguments going beyond the impacts and considered the implications for the university admissions department and the applicant. The 3Cs may have been implicit, meaning that the response was in 'context' of the Border University, 'content' was based on the knowledge of data points and data sets and their use; and implicit links to 'concepts' included ethics, identity & power.

In-depth responses were rarely seen in this question, with successful responses showing greater in-sight, writing with precise arguments which were well developed and supported by the sources and independent research.

Below are a series of statements, to illustrate how one idea could be developed into the level of detail needed for each of the mark band descriptors.

A limited response: Representing applicants attributes by data point could lead to bias.

A descriptive response: Representing some personal attributes such as gender and race as data points could lead to Border University having a biased selection.

A relevant response: As Border University has the goal of having a diverse student population *(implied source),* if the personal attributes such as race are stored as a data point, then the data-driven interventions may be programmed so that this either gives the applicants an advantage or

disadvantage depending on how the race has been translated to a data point. This could lead to certain groups of individuals with lower academics ranked higher or lower depending on their race *(implied ethics)*.

An insightful response: According to **source A** (*explicit source)*, Border University wants to achieve the goal of having a diverse student population. This could lead to the University instructing the programmers to represent different races with different values for these data points e.g. In 2023 the US Supreme Court ruled against Affirmative Action, the use of race in college admissions. Prior to this some universities e.g Harvard had considered race as a factor in admissions to have a more diverse student population (*explicit research*). This would be unethical of the university if they adopted this approach (*explicit concept*).

Question 4

The approach to this question was varied depending on how teachers had interpreted the available resources and guided their students. Question 4 is a relatively new type of question, requiring students to research both interventions identified in the pre-release, use the evaluation framework in the guide and make a recommendation that best suits the scenario outlined in the sources.

There was a wide range of approaches to this question, which included some students choosing an intervention and justifying why it was the better recommendation, while others compared the advantages and disadvantages of each intervention and then made a recommendation, and then some students based their response on the evaluation framework to evaluate both interventions using the criteria with evidence of trade-offs.

The format of this question is known in advance of the examination, and therefore open to the possibility for students to pre-prepare written responses. However, this limits the ability for students to score highly because to earn more marks the response needs to be applied to the scenario described in the four sources. Compared to last May it was evident that more students were using their independent research to support the evaluation points being made, but still many students did not use all of the sources, in particular sources C and D.

At times, independent research was explicitly described in responses but only implicitly linked to the argument. Students must ensure that real-world examples support the argument being made, or can then be linked to the intervention in the scenario and not be there just to prove to the examiner that they have done some research.

In addition, many conclusions were limited due to students repeating or summarising their previous points instead of evaluating them when writing the justification to support their recommendation.

Below are a series of statements, to illustrate how one idea can be developed into the level of detail needed for each of the mark band descriptors.

A limited response: Intervention 1 includes a fixed set of rules that can be followed consistently.

A descriptive response: The rule-based decision-making tool asks questions using an online form (*implied source B*). Because all applicants are answering the same questions, the fixed set of rules will handle all applications fairly and consistently (*implicit link to evaluation framework – ethics*) and is commonly used in the UK for applicants screening for university (*implied independent research*)

A relevant response: According to Source B – the rule-based decision-making tool allows all applicants to respond to a series of questions using an online form (explicit source B). From the form, all applicants' answers are converted to a series of data points which are then used to rank the applicant based on the set of rules applied. This means that all applicants are treated equally and fairly which would be acceptable by both students and the admissions team. The rule-based approach would be more transparent (*explicit link to the Evaluation Framework*) as analysis of the algorithm can see how applicants are ranked would be considered, compared to intervention 2 (implicit trade off with other intervention). As an example, according to UCAS, when an applicant applies to the UK universities, UCAS Tariff points translate qualifications and grades into a numerical value (*explicit independent research*).

An insightful response: The response would build on a 'relevant' response with a similar approach but consistently applying it to each evaluation point and thorough use of the evaluation framework and sources available.

For example, to add to the previous response, the candidate could make additional reference to Source C and consider a trade-off of evaluative points. For example – According to Marilyn in Source C converting the IB Diploma score into a data point to be used by the rule-based system would be relatively straight forward, however, recording the sport, activities and CAS project would be more complex and may not adequately reflect the student beyond their academics. Consequently, the rule-based system may not adequately represent the applicant. This is particularly important since in Source A the Border University is seeking excellence in both academic and personal pursuits.

Recommendations and guidance for the teaching of future students

The Theme: is based on one of the Higher-Level Challenges as outlined on pages 41-43 of the Guide which include 5.1 Global Wellbeing, 5.2 Governance & Human Rights and 5.3 Sustainable Development. Throughout the course, use the allocated learning time to research these challenges and identify different interventions that could address them. Students can practise researching real-world examples of these interventions, evaluate them using the evaluation framework in the guide and then use their findings to justify the recommendation. In class, this could be done in a variety of ways, from writing a report, to having students do an 'elevator pitch' or a detailed presentation, where they must persuade their peers to vote on their intervention. Then once the pre-release is issued, students can repeat these activities in preparation for the examination.

Approach to the Pre-release material. The Digital Society consists only of one page which outlines the challenge and two possible interventions. This scope allows students to fully investigate the global challenge and interventions in a variety of contexts. Beyond researching the digital technologies and real-world examples of each intervention, class activities should include creating a range of different scenarios and/or sample sources. This would then allow students to practise applying their findings to different scenarios.

Terms in the Pre-release: Teachers should ensure that these terms & technologies are fully understood and can be used correctly within the students' practice responses.

Collaborative Research: Students in smaller HL classes would benefit from collaborating with other students when conducting in-depth research, to broaden their research and sharing of ideas.

Applying the 3Cs to responses: When writing responses students should ensure that these are in **context** of the main theme of the paper e.g. in this case applicant screening in University. Students with secure knowledge of the **content** topics of the syllabus will naturally bring in the most appropriate terminology within their responses and should be recalling which of these that they have learned in class can be applied to the question. Likewise, students should also identify several **concepts** that are relevant and can be integrated into the response. This should not just be stated, as proof that the connection has been made, but support the answering of the question. Planning at the start of each long response question should be done, to ensure that this is not an afterthought.

Practice deconstructing the question: Further guidelines should be provided for students to focus on the wording of each question. Developing skills on deconstructing questions would aid students in knowing how to approach the question as well as identifying what the question is asking so that existing knowledge and research can be applied. This would help students who have made revision notes, apply what they have learned to the question, instead of re-producing the boilerplate answer that they had prepared as part of their revision. Question 3 allowed students to produce a familiar essay structure, with an introduction, reasons for acceptability vs reasons for it to be unacceptable and a conclusion. Whereas Question 4 the emphasis is on using the evaluation framework with trade-offs between the two interventions forming the analysis and evaluation throughout the body of the essay.

Using the Evaluation Framework: Students should be guided to explicitly refer to the terms in the Evaluation Framework (EF) - Equity, Acceptability, Cost, Feasibility, Innovation, and Ethics (as outlined in the course guide), when evaluating the interventions and connect these to their own inquiries and examples. In addition, students should learn how to write evaluatively, balancing and comparing (tradeoffs) of the evaluations for each EF term to justify a recommendation.

More explicit linking of the sources: Students when using the sources should state the source letter with a summary and/or quoted phrase to support the point being made. For example, "As source D states, Jonathan believes an AI-based decision-making tool give Border University an advantage over other universities. Not only will the AI decision making tool, speed up the application process of analysing the applicants video, it will make more informed decisions about the suitability of the applicant compared to other universities using traditional screening tools."

More explicit linking of Independent Research (IR): Students when using IR should state as clearly as possible the details of their research and use it to support the argument being made. It is not adequate to mention incidents of AI bias or add in tech company names or say "research shows that", without then applying it to the argument or point being made. Supporting research should make explicit reference to the sources e.g. "according to an article published in The Conversation...", "according to the BBC (2024).."

Develop Conclusion/Recommendation: Developing students' evaluative comments and conclusions should still be a focus for teachers for questions 3 & 4. Ensuring that the conclusion is more than a summary of the comments made or an unsupported judgement. Instead, include judgements that are supported by the arguments, that may be based on a long- or short-term benefit, or based on how many stakeholders would be affected. Particularly in Question 4, the use of trade-offs can be effective in supporting the recommended intervention. There are two types of trade-offs, these can be between the interventions e.g. the cost of a rule-based intervention is lower compared to the AI intervention. Or can be within the intervention e.g. the cost of purchasing the rule-based intervention is lower, however, the cost of the manpower for the admissions department would remain the same since the staff still need to review each recommendation to reject or review in more detail.

Examination Practice: Students should be given opportunities to practise examination questions and focus on two areas - handwriting and time management. Students should practise handwritten responses within a given time limit. This would allow them to improve on handwriting legibility and practice writing responses proportional to the marks available for each question.