Psychology subject report

2023 cohort

February 2024

Contents

Introduction

Throughout 2023, schools and the Queensland Curriculum and Assessment Authority (QCAA) continued to improve outcomes for students in the Queensland Certificate of Education (QCE) system. These efforts were consolidated by the cumulative experience in teaching, learning and assessment of the current General and General (Extension) senior syllabuses, and school engagement in QCAA endorsement and confirmation processes and external assessment marking. The current evaluation of the QCE system will further enhance understanding of the summative assessment cycle and will inform future QCAA subject reports.

The annual subject reports seek to identify strengths and opportunities for improvement of internal and external assessment processes for all Queensland schools. The 2023 subject report is the culmination of the partnership between schools and the QCAA. It addresses school-based assessment design and judgments, and student responses to external assessment for this subject. In acknowledging effective practices and areas for refinement, it offers schools timely and evidence-based guidance to further develop student learning and assessment experiences for 2024.

The report also includes information about:

- how schools have applied syllabus objectives in the design and marking of internal assessments
- how syllabus objectives have been applied in the marking of external assessments
- patterns of student achievement.

The report promotes continuous improvement by:

- identifying effective practices in the design and marking of valid, accessible and reliable assessments
- recommending where and how to enhance the design and marking of valid, accessible and reliable assessment instruments
- providing examples that demonstrate best practice.

Schools are encouraged to reflect on the effective practices identified for each assessment, consider the recommendations to strengthen assessment design and explore the authentic student work samples provided.

Audience and use

This report should be read by school leaders, subject leaders and teachers to:

- inform teaching and learning and assessment preparation
- assist in assessment design practice
- assist in making assessment decisions
- help prepare students for internal and external assessment.

The report is publicly available to promote transparency and accountability. Students, parents, community members and other education stakeholders can use it to learn about the assessment practices and outcomes for senior subjects.

Report preparation

The report includes analyses of data and other information from endorsement, confirmation and external assessment processes. It also includes advice from the chief confirmer, chief endorser and chief marker, developed in consultation with and support from QCAA subject matter experts.

Subject highlights

188
schools offered Psychology

80.5%
of students completed 4 units

99.01%
of students received a C or higher

Subject data summary
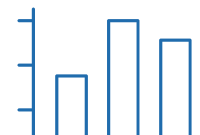
Subject completion

The following data includes students who completed the General subject.

Note: All data is correct as at January 2024. Where percentages are provided, these are rounded to two decimal places and, therefore, may not add up to 100%.

Number of schools that offered Psychology: 188.

Completion of units	Unit 1	Unit 2	Units 3 and 4
Number of students completed	6,175	5,749	4,971

Units 1 and 2 results

Number of students	Satisfactory	Unsatisfactory
Unit 1	5,690	485
Unit 2	5,251	498

Units 3 and 4 internal assessment (IA) results

Total marks for IA
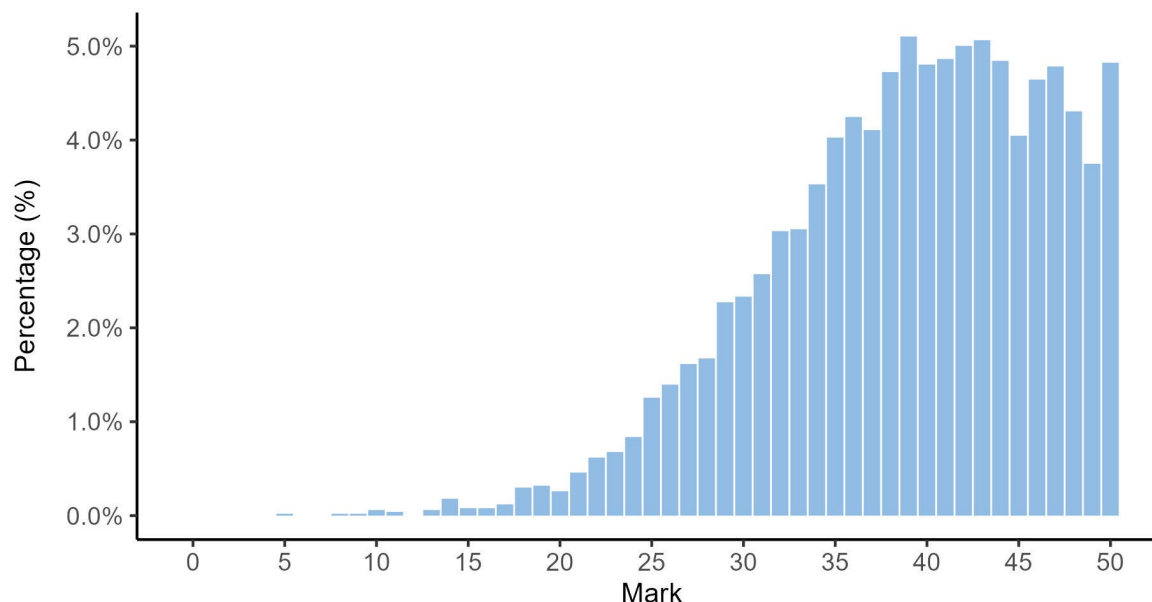
IA1 marks

IA1 total
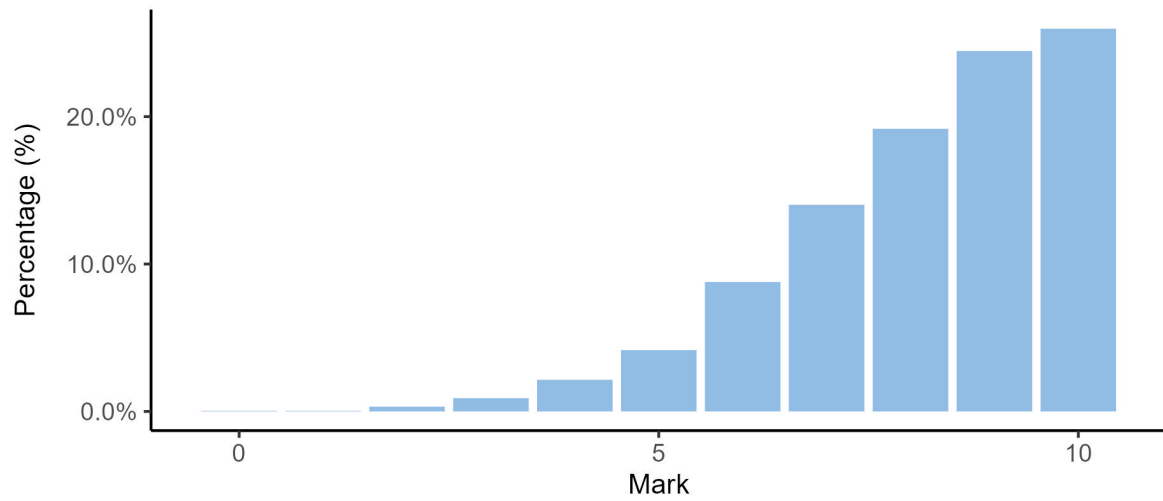
IA1 Criterion: Data test
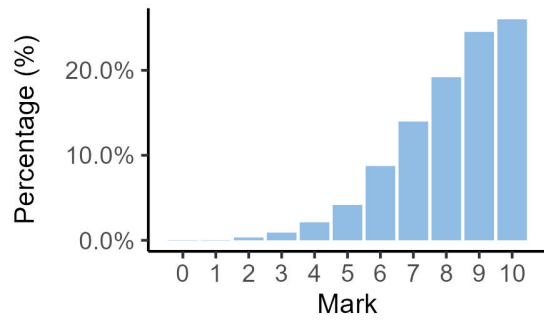
IA2 marks

IA2 total
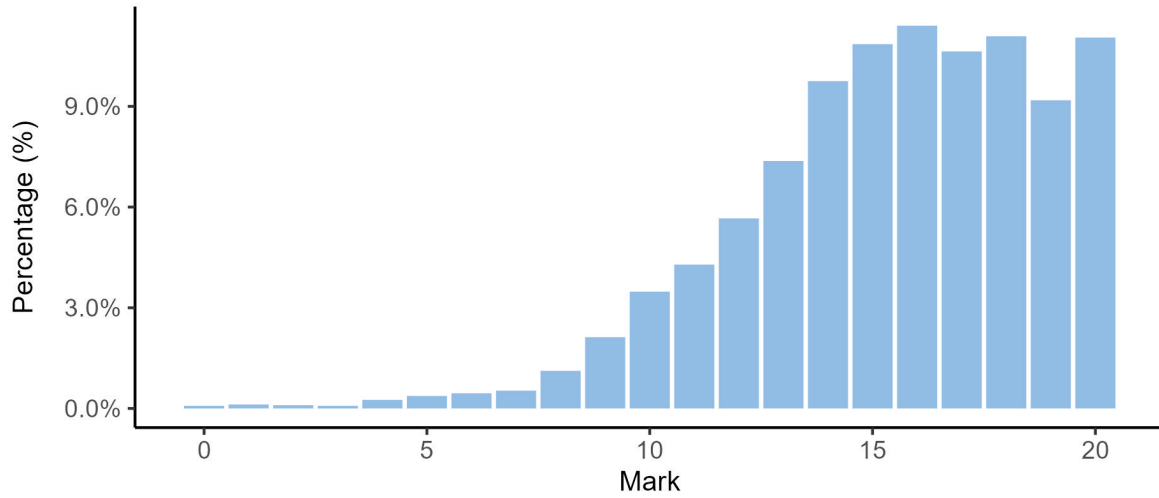
IA2 Criterion: Research and planning
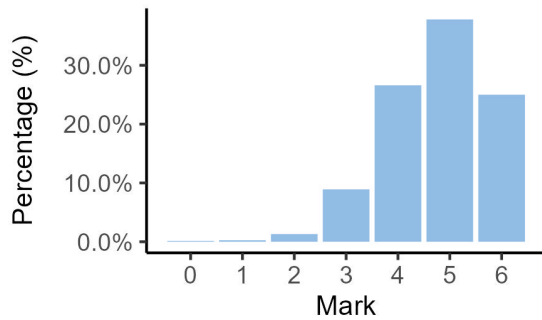
IA2 Criterion: Analysis of evidence
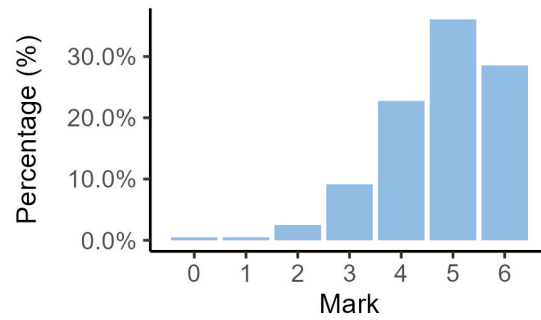
IA2 Criterion: Interpretation and evaluation
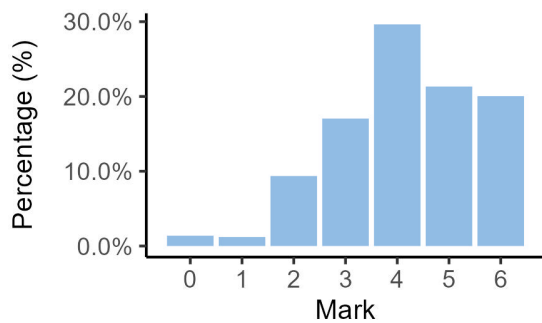
IA2 Criterion: Communication
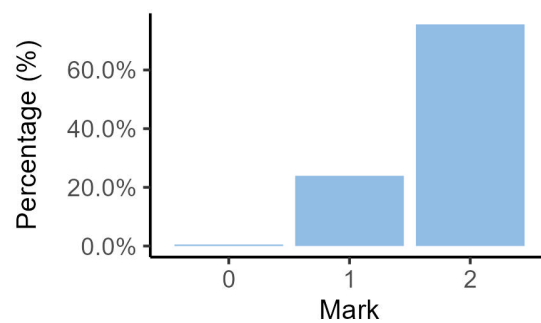
IA3 marks

IA3 total
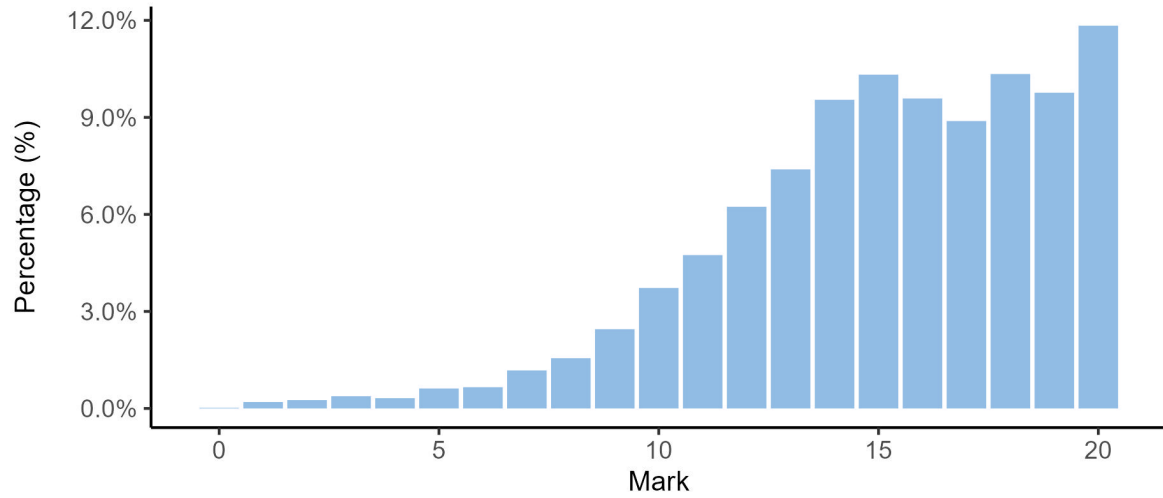
IA3 Criterion: Research and planning
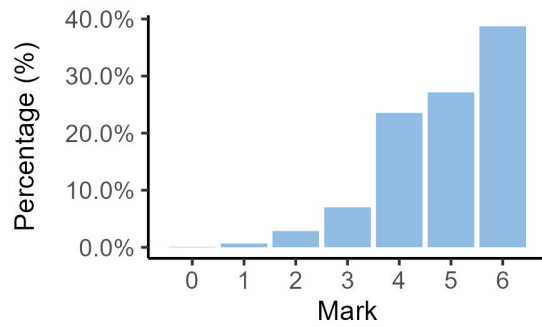
IA3 Criterion: Analysis and interpretation
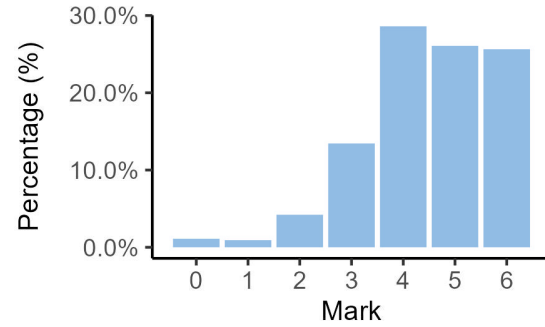
IA3 Criterion: Conclusion and evaluation
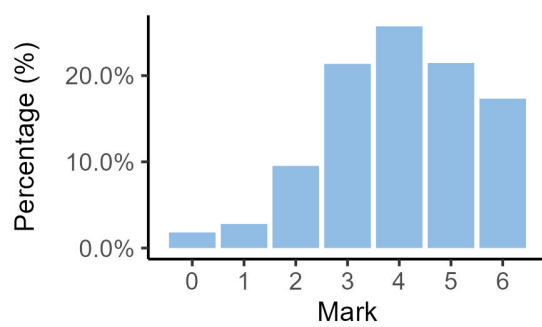
IA3 Criterion: Communication
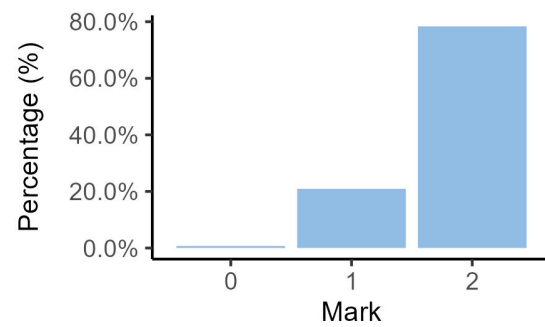
External assessment (EA) marks
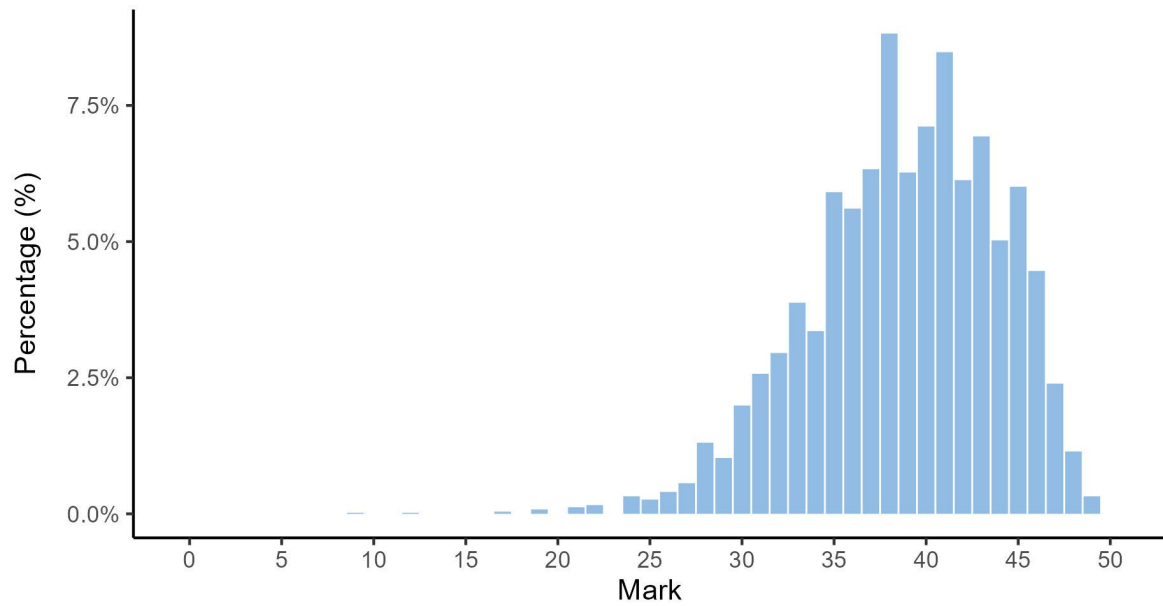
Final subject results

Final marks for IA and EA
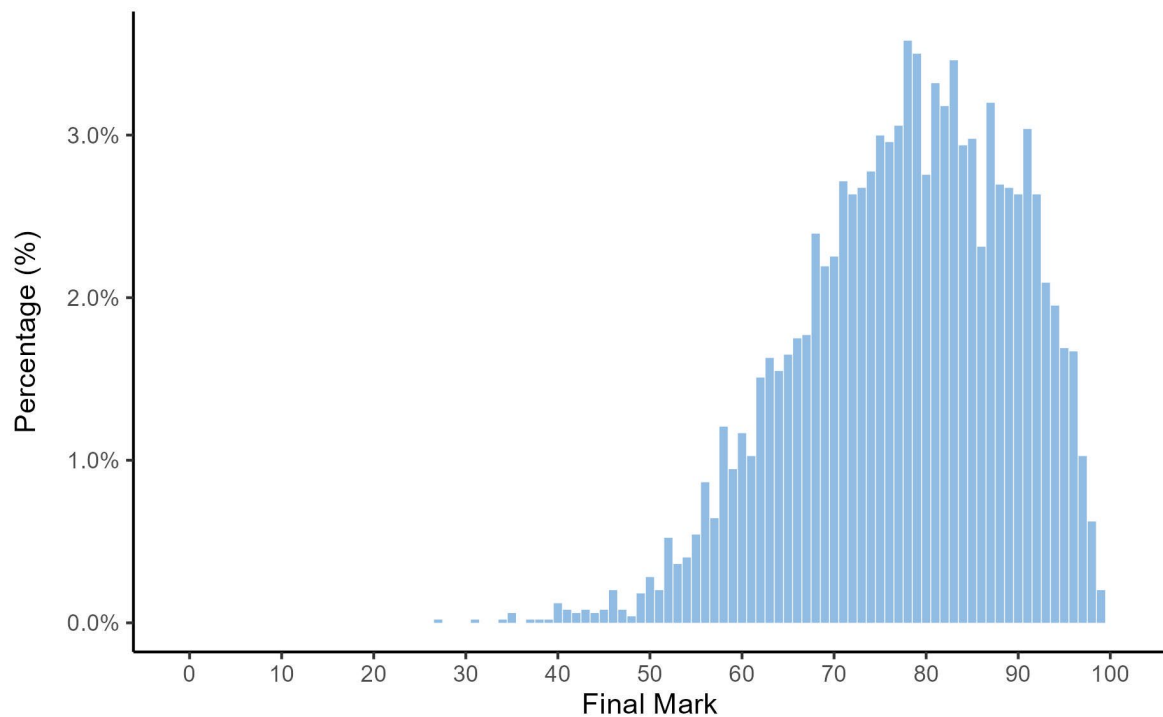
Grade boundaries

The grade boundaries are determined using a process to compare results on a numeric scale to the reporting standards.

Standard	A	B	C	D	E
Marks achieved	100–87	86–72	71–49	48–19	18–0

Distribution of standards

The number of students who achieved each standard across the state is as follows.

Standard	A	B	C	D	E
Number of students	1,299	2,243	1,380	49	0

Internal assessment

The following information and advice relate to the assessment design and assessment decisions for each IA in Units 3 and 4. These instruments have undergone quality assurance processes informed by the attributes of quality assessment (validity, accessibility and reliability).

Endorsement

Endorsement is the quality assurance process based on the attributes of validity and accessibility. These attributes are categorised further as priorities for assessment, and each priority can be further broken down into assessment practices.

Data presented in the Assessment design section identifies the reasons why IA instruments were not endorsed at Application 1, by the priority for assessments. An IA may have been identified more than once for a priority for assessment, e.g. it may have demonstrated a misalignment to both the subject matter and the assessment objective/s.

Refer to *QCE and QCIA policy and procedures handbook v5.0*, Section 9.6.

Percentage of instruments endorsed in Application 1

Number of instruments submitted	IA1	IA2	IA3
Total number of instruments	185	185	185
Percentage endorsed in Application 1	32%	84%	88%

Confirmation

Confirmation is the quality assurance process based on the attribute of reliability. The QCAA uses provisional criterion marks determined by teachers to identify the samples of student responses that schools are required to submit for confirmation.

Confirmation samples are representative of the school's decisions about the quality of student work in relation to the instrument-specific marking guide (ISMG), and are used to make decisions about the cohort's results.

Refer to *QCE and QCIA policy and procedures handbook v5.0*, Section 9.7.

The following table includes the percentage agreement between the provisional marks and confirmed marks by assessment instrument. The Assessment decisions section of this report for each assessment instrument identifies the agreement trends between provisional and confirmed marks by criterion.

Number of samples reviewed and percentage agreement

IA	Number of schools	Number of samples requested	Number of additional samples requested	Percentage agreement with provisional marks
1	184	1,111	0	98.91%
2	184	1,405	52	86.41%
3	185	1,399	7	85.48%

Internal assessment 1 (IA1)

Data test (10%)

This assessment focuses on the application of a range of cognitions to multiple provided items.

Student responses must be completed individually, under supervised conditions, and in a set timeframe.

Assessment design

Validity

Validity in assessment design considers the extent to which an assessment item accurately measures what it is intended to measure and that the evidence of student learning collected from an assessment can be legitimately used for the purpose specified in the syllabus.

Reasons for non-endorsement by priority of assessment

Validity priority	Number of times priority was identified in decisions*
Alignment	86
Authentication	0
Authenticity	4
Item construction	16
Scope and scale	34

*Each priority might contain up to four assessment practices.

Total number of submissions: 185.

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that:

- contained datasets that aligned to various aspects of Unit 3 subject matter, i.e. Localisation of function in the brain, Visual perception, Memory, or Learning

- used a variety of the cognitions listed in the mark allocations table (Syllabus section 4.7.1) to enable students to demonstrate a range of skills across the task

- used the cognitive verb *identify* consistently with the relevant objective, i.e. when used to assess Objective 2, it involved the identification of an unknown scientific quantity, whereas when used for Objective 3, it related to the identification of a trend, pattern, relationship or uncertainty.

Practices to strengthen

It is recommended that assessment instruments:

- use measures of central tendency that suit the raw data, e.g. calculate median only where the data appears to have outliers or is not normally distributed

- ensure that the cognitions required in the expected response align to the cognitive verbs used in the items and to the assessment objectives, e.g. the cognitive verb *deduce* may be used for

items that require the development of a logical conclusion from reasoning (mark allocations table, Syllabus section 4.7.1)

- include items that require students to use information from the datasets, rather than requiring students to rely on prior knowledge

- use appropriate inferential measures of uncertainty or dispersion (e.g. standard error and confidence intervals) in items that require students to infer whether there is a significant difference between means based on the associated error bars.

Accessibility

Accessibility in assessment design ensures that no student or group of students is disadvantaged in their capacity to access an assessment.

Reasons for non-endorsement by priority of assessment

Accessibility priority	Number of times priority was identified in decisions*
Bias avoidance	13
Language	15
Layout	15
Transparency	22

*Each priority might contain up to four assessment practices.

Total number of submissions: 185.

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that:

- featured items that specifically referred to the relevant tables or figures in the datasets that students needed to use to form their responses

- used correct grammar and contained a clearly identifiable cognition in each item

- displayed data in tables or graphs that were clearly and consistently labelled and were legible and accessible when printed.

Practices to strengthen

It is recommended that assessment instruments:

- clearly indicate what students need to do to attain each mark allocated within a question

- avoid datasets that use racial categories or socioeconomic status as variables to limit bias.

Additional advice

- When developing the task, refer to the syllabus glossary (Syllabus section 6) to select the most appropriate cognitive verb to cue students towards the expected qualities of the response (e.g. *compare* cues students to identify similarities and differences and to describe the significance of those observations). Datasets should clearly support these observations.

Assessment decisions

Reliability

Reliability is a judgment about the measurements of assessment. It refers to the extent to which the results of assessments are consistent, replicable and free from error.

Agreement trends between provisional and confirmed marks

Criterion number	Criterion name	Percentage agreement with provisional	Percentage less than provisional	Percentage greater than provisional	Percentage both less and greater than provisional
1	Data test	98.91%	0.54%	0.51%	0%

Effective practices

Accuracy and consistency of the application of the ISMG for this IA was most effective when:

- the marking scheme was consistently and accurately applied across all samples for the cohort

- annotations on student work aligned to the marking scheme and indicated where each mark was awarded (*QCE and QCIA policy and procedures handbook v5.0*, Section 9.7.1)

- provisional marks were accurately calculated by correctly converting the awarded marks to a percentage using the total possible marks and then applying the percentage cut-offs in the ISMG, e.g. awarding a mark of 10 only where the percentage achieved on the data test was greater than 90% (refer to the *Making judgments* webinar under Resources in the Syllabuses application (app) on the QCAA Portal).

Samples of effective practices

The following excerpt demonstrates the use of annotations on a student response to indicate where evidence matches the marking scheme in an Objective 3 (analyse evidence) item. This item required students to contrast memory function based on the analysis of data.

Note: The characteristic/s identified may not be the only time the characteristic/s has occurred throughout a response.
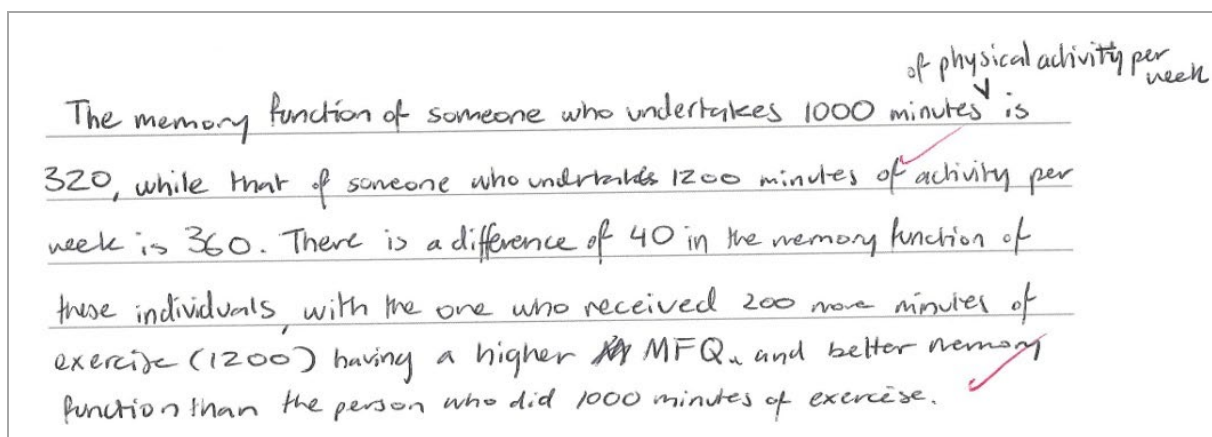
The following excerpt demonstrates the use of annotations on a student response to indicate where evidence matches the marking scheme in an Objective 4 (interpret evidence) item. This item required students to draw a conclusion about the most effective method of memory retention, supported with evidence from provided data.

Note: The characteristic/s identified may not be the only time the characteristic/s has occurred throughout a response.

> Table 2 shows the highest mean number of correctly recalled words was group A. (18.1). Therefore the most effective method of memory retention for this experiment is distinguishing the upper case and lower case letters for the presented words.

Practices to strengthen

To further ensure accuracy and consistency of the application of the ISMG for this IA, it is recommended that:

- marking schemes are updated after the task has been completed to account for variations in student responses
- marking schemes clearly match each mark to a characteristic in the expected response.

Additional advice

- Correct and accurate marking schemes for comparable assessments need to be consistently applied and submitted for confirmation. Comparable assessments should be developed in the Endorsement app to ensure the correct examination and its matching marking scheme are available for the confirmation review (*QCE and QCIA policy and procedures handbook v5.0*, Section 7.4).

Internal assessment 2 (IA2)

Student experiment (20%)

This assessment requires students to research a question or hypothesis through collection, analysis and synthesis of primary data. A student experiment uses investigative practices to assess a range of cognitions in a particular context. Investigative practices include locating and using information beyond students' own knowledge and the data they have been given.

Research conventions must be adhered to. This assessment occurs over an extended and defined period of time. Students may use class time and their own time to develop a response.

Assessment design

Validity

Validity in assessment design considers the extent to which an assessment item accurately measures what it is intended to measure and that the evidence of student learning collected from an assessment can be legitimately used for the purpose specified in the syllabus.

Reasons for non-endorsement by priority of assessment

Validity priority	Number of times priority was identified in decisions*
Alignment	19
Authentication	7
Authenticity	1
Item construction	4
Scope and scale	0

*Each priority might contain up to four assessment practices.

Total number of submissions: 185.

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that:

- provided a range of options for practicals related to Unit 3 subject matter, i.e. Localisation of function in the brain, Visual perception, Memory, and/or Learning

- clearly indicated (e.g. using asterisks) which aspects of the task specifications could be completed in groups

- provided prompts in the scaffolding to allow the development of unique student responses, e.g. indicating that the sample research question cannot be used.

Practices to strengthen

It is recommended that assessment instruments:

- avoid using practicals that are difficult to replicate in a way that allows for the collection of sufficient raw data and systematic analysis, e.g. avoid Bugelski and Alampay (1961) (Syllabus

section 4.4), as it yields data that is categorical in nature and may not support thorough identification of trends, patterns and relationships

- include all the assessment specifications outlined in Syllabus section 4.7.2.

Accessibility

Accessibility in assessment design ensures that no student or group of students is disadvantaged in their capacity to access an assessment.

Reasons for non-endorsement by priority of assessment

Accessibility priority	Number of times priority was identified in decisions*
Bias avoidance	0
Language	0
Layout	0
Transparency	1

*Each priority might contain up to four assessment practices.

Total number of submissions: 185.

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that:

- clearly stated the timeframe for completing each section of the task within the checkpoints

- were free from grammatical and spelling errors.

Practices to strengthen

There were no significant issues identified for improvement.

Assessment decisions

Reliability

Reliability is a judgment about the measurements of assessment. It refers to the extent to which the results of assessments are consistent, replicable and free from error.

Agreement trends between provisional and confirmed marks

Criterion number	Criterion name	Percentage agreement with provisional	Percentage less than provisional	Percentage greater than provisional	Percentage both less and greater than provisional
1	Research and planning	95.11%	4.89%	0%	0%
2	Analysis of evidence	92.39%	7.61%	0%	0%
3	Interpretation and evaluation	91.30%	7.61%	1.09%	0%
4	Communication	98.37%	0.54%	1.09%	0%

Effective practices

Accuracy and consistency of the application of the ISMG for this IA was most effective when:

- for the Research and planning criterion, the management of risks and ethical issues was outlined through a *considered* discussion to demonstrate careful and deliberate thought

- for the Analysis of evidence criterion

    – processing of data was *correct* and made use of measures of central tendency (e.g. mean, median), dispersion (e.g. standard deviation, standard error, interquartile range) and inferential statistics (e.g. one- or two-tailed t-tests, Mann–Whitney U test) *relevant* to the dataset

    – identification of trends, patterns and relationships *thoroughly* addressed the processed data *relevant* to the research question, noting all aspects that would be reasonably expected, i.e. where multiple relationships were identified in the processed data, all of those pertinent to the research question were directly addressed.

Samples of effective practices

The following excerpt demonstrates correct and relevant processing of data, including summary statistics and error bars on the graph.

Note: The characteristic/s identified may not be the only time the characteristic/s has occurred throughout a response.

Table 3: *Processed data*

Condition	Matched	Mismatched	Descriptive Statistic
Mean	3.16	1.11	Most appropriate measure of central tendency – no outliers identified.
SD	1.74	1.59	Enabled comparison between variance from mean in each condition.
SE	0.40	0.37	Measures potential variability within test scores, determines result validity (overlapping error bars), reliability (value size).
Percentage SE	12.64%	33.11%	Compares standard error relative to value size.

correct and relevant processing
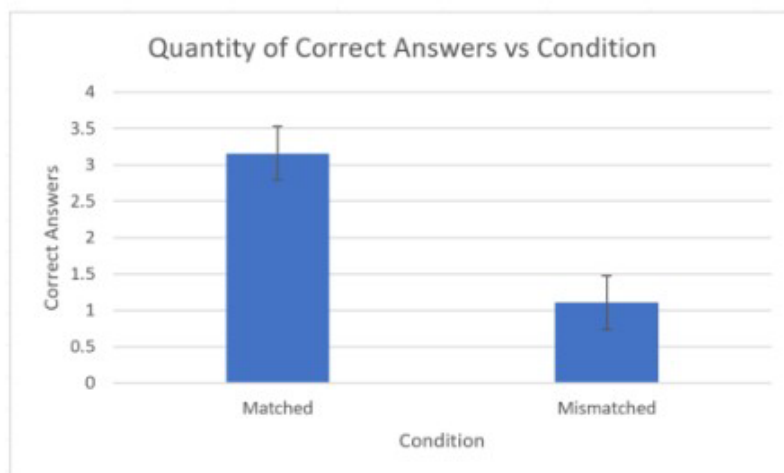
Data Analysis:

Figure 1: *Quantity of Correctly Recalled Answers vs Matched or Mismatched Condition*

The following excerpt demonstrates considered management of risks and ethical issues through a series of strategies designed to protect the privacy and comfort of individuals involved.

Note: The characteristic/s identified may not be the only time the characteristic/s has occurred throughout a response.

MANAGEMENT OF RISKS

To ensure the experiment upheld ethical obligations, several processes were implemented. Subjects were informed that their participation was voluntary, and they had the right to withdraw themselves and their data from the experiment at any time. Further, the experiment and expectations of participants was explained prior to the commencement of the experiment to gain informed consent (Appendix 3). To protect participant privacy, subjects did not sign their name on answer sheets, ensuring answers were anonymous. The audio stimulus volume was set to a pre-determined volume within the safe decibel range of below 70 decibels (*Hearing Health Foundation*, 2023).

The following excerpt demonstrates improvements and extensions logically derived from the limitations of data collection, such as predicting the effect of an alternative control variable or sampling technique.

Note: The characteristic/s identified may not be the only time the characteristic/s has occurred throughout a response.

A suggested improvement and extension to this experiment is to change the distractor task. Many participants were extremely nervous after being informed they would have to count backwards. Distractor tasks that would serve the same purpose, but be less intimidating are reciting the alphabet, listing as many rhyming words as they can in a given time, or having to complete a dot-to-dot. These are activities that they have more experience with, albeit still artificial in nature, therefore making the participants less nervous – a notable extraneous variable. This adjustment would therefore improve the overall reliability of the experiment.

Another improvement would be using random sampling or stratified sampling rather than convenience sampling. This would enable a more representative sample of the population to be selected, thus providing more reliable and valid results.

Practices to strengthen

To further ensure accuracy and consistency of the application of the ISMG for this IA, it is recommended that:

- for the Interpretation and evaluation criterion
    - suggested improvements and extensions are *logically derived* from uncertainty and limitations identified in the analysis of evidence, e.g. measures of dispersion, confidence intervals, sample size or composition, assumptions of statistical tests
    - discussions of reliability and validity are *justified* by referencing aspects of the experimental process and specific discussion of types of reliability and validity, e.g. inter-rater reliability, test–retest reliability, internal validity, external validity.

Additional advice

- School-based assessment policies should be applied when managing response length. Assessment responses that exceed syllabus length conditions must be accompanied by clear annotations to show how the school's assessment policy has been applied and which evidence was used to make a judgment. Further information about managing assessment response length is in the *QCE and QCIA policy and procedures handbook v5.0*, Section 8.2.6.

- School-based assessment policies and procedures for managing academic integrity issues should be applied to ensure that students' responses are original. Where applicable, how and where school policies have been applied should be clearly indicated on student responses. Further information about authenticating student responses can be found in the *QCE and QCIA policy and procedures handbook v5.0*, Sections 8.2.8 and 11.1.5.

- Any material that is used as evidence when making a judgment about the student's achievement should be included in the body of the report. Summaries of collected data and management of risks and ethical or environmental issues in the body of the report, with full details provided as supplementary material in appendices, are suitable evidence (*QCE and QCIA policy and procedures handbook v5.0*, Section 8.2.6).

- Teachers should review advice about how to determine provisional marks when applying the best-fit model to make decisions (refer to *Using ISMGs for General Science syllabuses* under Resources in the Syllabuses app on the QCAA Portal). Marked ISMGs should indicate the characteristics evident in the student response and the mark awarded for each criterion (*QCE and QCIA policy and procedures handbook v5.0*, Section 9.6.1).

Internal assessment 3 (IA3)

Research investigation (20%)

This assessment requires students to evaluate a claim. They will do this by researching, analysing and interpreting secondary evidence from scientific texts to form the basis for a justified conclusion about the claim. A research investigation uses research practices to assess a range of cognitions in a particular context. Research practices include locating and using information beyond students' own knowledge and the data they have been given.

Research conventions must be adhered to. This assessment occurs over an extended and defined period of time. Students may use class time and their own time to develop a response.

Assessment design

Validity

Validity in assessment design considers the extent to which an assessment item accurately measures what it is intended to measure and that the evidence of student learning collected from an assessment can be legitimately used for the purpose specified in the syllabus.

Reasons for non-endorsement by priority of assessment

Validity priority	Number of times priority was identified in decisions*
Alignment	7
Authentication	6
Authenticity	1
Item construction	3
Scope and scale	5

*Each priority might contain up to four assessment practices.

Total number of submissions: 185.

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that:

- included claims with a single assertion clearly drawn from Unit 4 subject matter, e.g. 'the presence of others affects the way we behave' rather than 'the presence of others affects the way we think, feel and behave'
- included all the assessment specifications indicated in Syllabus section 5.7.1.

Practices to strengthen

It is recommended that assessment instruments:

- avoid claims that are value statements or colloquial sayings (e.g. 'Do unto others as you would have them do to you') as these claims do not lend themselves to empirical examination
- include scaffolding that focuses on task processes or presentation of the student response rather than ways to structure the response.

Accessibility

Accessibility in assessment design ensures that no student or group of students is disadvantaged in their capacity to access an assessment.

Reasons for non-endorsement by priority of assessment

Accessibility priority	Number of times priority was identified in decisions*
Bias avoidance	0
Language	4
Layout	0
Transparency	1

*Each priority might contain up to four assessment practices.

Total number of submissions: 185.

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that:

- were free from grammatical and spelling errors

- included claims that avoided cultural, religious and racial bias.

Practices to strengthen

There were no significant issues identified for improvement.

Assessment decisions

Reliability

Reliability is a judgment about the measurements of assessment. It refers to the extent to which the results of assessments are consistent, replicable and free from error.

Agreement trends between provisional and confirmed marks

Criterion number	Criterion name	Percentage agreement with provisional	Percentage less than provisional	Percentage greater than provisional	Percentage both less and greater than provisional
1	Research and planning	95.70%	3.76%	0.54%	0%
2	Analysis and interpretation	94.62%	4.84%	0.54%	0%
3	Conclusion and evaluation	90.32%	9.14%	0.54%	0%
4	Communication	99.46%	0.54%	0%	0%

Effective practices

Accuracy and consistency of the application of the ISMG for this IA was most effective when:

- for the Analysis and interpretation criterion

  - identified evidence was *relevant* and of *sufficient* quality and quantity to answer the research question, e.g. analysis of data related to violent video games on aggression was based on a range of prior studies (see the *Psychology IA3 high-level annotated sample response v1.3*)

  - trends, patterns and relationships were *thoroughly* identified using *justified* scientific arguments that linked back to the research question.

Samples of effective practices

The following excerpt demonstrates clear development of a specific and relevant research question from a claim through a rationale that considers a series of variables related to the issue.

Note: The characteristic/s identified may not be the only time the characteristic/s has occurred throughout a response.

CLAIM: Social media is increasing conformity.

RATIONALE:

Increased social media usage is often associated with decreasing individualism, with many claiming that '*social media increases conformity*' (Abbariki, 2018). Others argue however that social media is a platform that encourages originality and unique thought (Arias, 2019). This debate has initiated numerous studies over the last decade to investigate the underlying influence of social media platforms on social conformity in individuals.

From this, an initial research question was developed: ***Does social media increase conformity in individuals?***

Social media can be defined as a means of eliciting interactions among people in which they create, share, and exchange information and ideas in virtual communities and networks (Warren, 2016). In contemporary society, over 95% of teenagers use at least one social media platform, such as Facebook, Instagram, or YouTube (Anderson & Jiang, 2018). Such platforms allows individuals to create online identities, communicate with others, and build social networks, allowing for the easy dispersion of behaviours, attitudes, and beliefs (both positive and negative). The pervasiveness of social media however plays a vital role in the development of an individuals' psychological and social maturation, influencing an individual's identity, sense of self, and opinions on others (Mayo Clinic, 2021).

Humans are highly sociable beings and hold an innate desire to belong to a group, often realigning attitudes and opinions to conform with a majority. This phenomenon is referred to as social conformity; the tendency for an individual to change their behaviours, beliefs, and actions to comply with group norms, either in a positive or negative way (Burton, et al., 2019). A seminal framework has proposed that conformity behaviours are driven by three fundamental motives: a desire to gain more information, to obtain social approval, and to maintain favourable self-concept (Chen, Liu, & Feng, 2022).

> Constant and unfiltered exposure to unrealistic images of people, lifestyles, and social norms can pressure individuals to conform to these standards and provoke feelings of inadequacy if they are not reached (Barmi, 2023). Psychologists have determined that social conformity engages multiple neurocognitive processes in the brain, including the networks and regions associated with reward and punishment processing (Chen, Liu, & Feng, 2022). Research suggests that conformity behaviours are based on reinforcement learning mechanisms developed in the posterior medial frontal cortex and ventral striatum (Schnuerch & Gibbons, 2014)
>
> With the ongoing rise of social media use and the introduction of e-cigarettes in contemporary society, conformity levels in young adults are predicted to reach an all-time high (Maartje, Gonneke, Catrin, Margaretha, & Regina, 2021). Through the 'likes', 'comments', and 'followers' functions, social media platforms increase conformity through social comparison and the desire for peer validation (Turner, 2023).
>
> This investigation will focus primarily on image sharing platforms (Instagram, Facebook, etc.) and vape use in young adults (18-24 years old). Vape-related content will be classified as any form of post promoting, featuring, or warning the use of vapes in society.
>
> **RESEARCH QUESTION**:
>
> As such, this investigation proposes the following research question:
>
> ***How does the exposure to vape-related content on image sharing platforms (Instagram) increase the expectancy of self-reported vape use among young adults (aged 18 to 24 years)?***

The following excerpt demonstrates extrapolation of credible findings to the claim by considering alternative factors outside the scope of this investigation.

Note: The characteristic/s identified may not be the only time the characteristic/s has occurred throughout a response.

> **Extrapolation, Extensions, and Improvements**
> Extrapolating evidence to the claim all the data supports that human attraction is biological; however, the biological factor of physical attractiveness is more important to males than females is the only aspect of the claim that was explored. There are many other aspects of biological human attraction that could be investigated as an extension to this investigation including facial symmetry, pheromones, and major histocompatibility complex. This would help to answer the claim more fully. Another extension to this study would be to look at the differences between males and females for social factors including financial prospects, similarity, proximity, and reciprocity. The studies should also be completed again in 2023 to determine if changes in relationships and work equity reflect a difference in mate choices today.

[handwritten annotations: "Extension", "extrapolated", "Claim"]

The following excerpt demonstrates suggested improvements and extensions relevant to identified limitations around the participants.

Note: The characteristic/s identified may not be the only time the characteristic/s has occurred throughout a response.

> Another weakness is the research could only use information from mothers who completed the survey, meaning if the mothers who responded to the survey differ significantly from those who did not, this could lead to there being selection bias which reduces the internal validity. ▮▮▮ study could be improved through extending the study to include father's as well as mother's comments ▮▮▮▮▮▮▮

Practices to strengthen

To further ensure accuracy and consistency of the application of the ISMG for this IA, it is recommended that:

- for the Research and planning criterion

  - a *considered* rationale clearly outlines the development of the research question from the claim, e.g. the rationale demonstrates progression from an overarching claim about the relationship between social media and conformity to the specific research question about the relationship between exposure to vape-related content and vape use

  - the research question is *specific* and *relevant* to Unit 4 and has been researched using sources *relevant* to the research question, e.g. explicit inclusion of the proposed variables and their relevant relationship in the context of social psychology

- for the Conclusion and evaluation criterion

  - *credible* findings of the research are extrapolated to clearly address aspects of the claim, as demonstrated in the excerpt titled Extrapolation, Extensions and Improvements, which offers insightful discussion of the quality of evidence that identifies findings addressing the claim, and limitations to the applicability of the evidence to the claim

  - suggested improvements consider the limitations of the evidence and are *relevant* to the claim.

Additional advice

- School-based assessment policies and procedures for managing response length must be applied clearly and consistently when making judgments about student responses to assessment. Assessment responses that exceed syllabus length conditions must be accompanied by clear annotations to show how the school's assessment policy has been applied and which evidence was used to make a judgment. Further information about managing assessment response length is in the *QCE and QCIA policy and procedures handbook v5.0*, Section 8.2.6. Schools are responsible for ensuring that students are aware of the school-based assessment policy and procedures regarding management of response length.

- Teachers should use the best-fit approach when making judgments about student marks, choosing the performance level that best fits the typical evidence in the student work as indicated by a majority of the descriptors for the performance level. Marked ISMGs should indicate the characteristics evident in the student response and the mark awarded for each criterion (*QCE and QCIA policy and procedures handbook v5.0*, Section 9.6.1). Further information about making judgments using an ISMG is available in *Module 3 — Making reliable judgments* under Resources in the Assessment Literacy app on the QCAA Portal.

External assessment
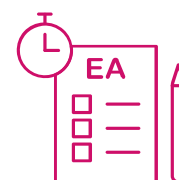
External assessment (EA) is developed and marked by the QCAA. The external assessment for a subject is common to all schools and administered under the same conditions, at the same time, on the same day.

Examination (50%)

Assessment design

The assessment instrument was designed using the specifications, conditions and assessment objectives described in the summative external assessment section of the syllabus. The examination consisted of two papers:

- Paper 1, Section 1 consisted of multiple choice questions (20 marks)

- Paper 1, Section 2 consisted of short response questions (30 marks)

- Paper 2, Section 1 consisted of short response questions (44 marks).

The examination assessed subject matter from Units 3 and 4. Questions were derived from the contexts of Localisation of function in the brain, Visual perception, Memory, Learning, Social psychology, Interpersonal processes, Attitudes and Cross-cultural psychology.

The assessment required students to respond to multiple choice and short response questions.

Assessment decisions

Assessment decisions are made by markers by matching student responses to the external assessment marking guide (EAMG). The external assessment papers and the EAMG are published in the year after they are administered.

Multiple choice question responses

There were 20 multiple choice questions in Paper 1.

Percentage of student responses to each option

Note:

- The correct answer is **bold** and in a blue shaded table cell.

- Some students may not have responded to every question.

Question	A	B	C	D
1	**79.11**	6.27	10.16	4.17
2	10.12	29.06	7	**53.51**
3*	**39.18**	13.77	23.29	**23.46**
4	19.36	**73.26**	4.54	2.59
5	**76.91**	5.6	10.36	6.82
6	**85.52**	6.62	6.27	1.34
7	3.03	14.15	26.82	**55.67**

Question	A	B	C	D
8	25.86	9.65	6.39	**57.89**
9	10.12	22.85	**65.22**	1.45
10	2.46	**83.79**	8.02	5.33
11	**25.05**	24.82	29.46	20.4
12	16.74	10.47	28.39	**44.08**
13	7.43	3.22	**84.22**	4.91
14	**74.1**	7.43	1.32	16.82
15	12.56	**56.51**	19.77	10.81
16	6.09	11.89	**78.56**	3.2
17	5.23	1.26	**87.78**	5.5
18	11.53	**72.82**	8.63	6.72
19	**45.23**	13.24	35.1	6.03
20	15.72	17.92	**44.37**	21.65

* The multiple-choice scrutiny panel reviewed the question and determined that there were two keys for this item.

Effective practices

Overall, students responded well to:

- items requiring recall of subject matter in simple contexts

- items requiring the interpretation of evidence from graphical and tabulated data

- opportunities to demonstrate their knowledge of studies identified in the Syllabus subject matter.

Samples of effective practices

Short response

The following excerpts are from Question 21 in Paper 1. It required students to describe extinction after operant conditioning and provide an example.

Effective student responses:

- clearly described extinction after operant conditioning

- provided a relevant example.

These excerpts have been included:

- to demonstrate clear descriptions of extinction using suitable terminology and examples relevant to operant conditioning.

Excerpt 1

Extinction refers to when a conditioned behaviour is extinguished after a period of no reinforcement. In regards to operant conditioning, this would have occured if the ~~bird~~ pigeon performing the behaviour was not reinforced with food from the hopper. after performing the action Eventually, the repeatedly pigeon would stop performing that action, as reinforcement was not given.

Excerpt 2

Extinction in operant conditioning is the disappearance of a trained response in response to an antecedent, after a period without reinforcement. An example would be if a dog learnt to role over and was given a treat as positive reinforcement. After a period of time in which the dog's behaviour is not reinforced with a treat, it may stop rolling over. this is extinction.

The following excerpt is from Question 3c) in Paper 2. It required students to compare observational learning with operant conditioning, using examples from an experiment.

Effective student responses:

- identified a similarity, a difference and the significance of the comparison between the two theories

- used language to clearly indicate differences

- offered clear examples.

This excerpt has been included:

- to demonstrate clear identification of the required features with examples and the use of language that makes explicit what is being described (i.e. similarity, difference, significance or example).

Both observational learning and operant conditioning involve the use of rewards to increase a behaviour or punishments to decrease a behaviour. For example, the children – the observational learners – watched the adults – ~~being~~ receiving operant conditioning – receive rewards or punishments for being aggressive towards the doll, therefore both groups were affected by the use of punishment or reward. ~~In observational learning, the reward~~ In operant conditioning, the reward or punishment is received directly by the participants, whereas in observational learning, the participants watch others receive the reward or punishment. For example, the adults received the reward or punishment for hitting the doll and the children watched these being given but did not receive consequences themselves. The significance is that behaviours can be increased or decreased multiple ways through either direct or vicarious rewards or punishments.

The following excerpt is from Question 5b) in Paper 2. It required students to describe two processes and draw a conclusion about which of the two was more effective.

Effective student responses:

- provided clear and correct descriptions

- drew a clear conclusion

- justified the conclusion by referring to the graph provided

This excerpt has been included:

- to demonstrate correct descriptions and a justified conclusion.

Recall is bringing a previously learnt thought that is stored in ~~long-term~~ memory into conscious awareness. Recognition or recognise is the ability to identify a thought that is in ~~long-term~~ and distinguish it memory, from another information. Recognition is more effective for eliciting information from working memory as the cues are present, which is evidenced on the graph as recognition had a higher proportion of words correct (approx. 0.73), compared to recall (approx. 0.49).

The following excerpt is from Question 7c) in Paper 2. It required students to draw two conclusions and justify them with evidence from a graph.

Effective student responses:

- drew clear conclusions

- justified conclusions with specific references to the evidence.

This excerpt has been included:

- to demonstrate clear and explicit statements of conclusion, justified with reference to specific aspects of the evidence.

Recall is context-dependent as the results of the matching conditions (both S/S and N/N), are significantly higher than the mismatching conditions (both S/N and N/S). This is evidenced as the means of 7.8 (SS) and 7 (NN), are much higher than those of 4.6 (SN) and 4.9 (NS). This is because the same context-dependent cues are present in the matching conditions, which assists in recall. Whereas, different cues are present in mismatching conditions which does not assist recall. This is also confirmed as the error bars for the matching conditions do not overlap with those of the mismatching conditions, indicating that matching conditions produce significantly higher results than mismatching,

Practices to strengthen

When preparing students for external assessment, it is recommended that teachers consider:

- teaching and learning opportunities involving multiple choice questions that require a detailed understanding of concepts

- responses that address the cues in the question, including the number of marks, to understand the expectations required for the mark qualities

- the wording of Syllabus subject matter statements to prepare students for the expectations of examination questions.