Design subject report

2024 cohort

January 2025

Contents

Introduction

The annual subject reports seek to identify strengths and opportunities for improvement of internal and external assessment processes for all Queensland schools. The 2024 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 General and General (Extension) subjects. 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 2025.

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.

Subject highlights

236
schools offered
Design

83.6%
of students
completed
4 units

93.44%
of students
received a
C or higher

Subject data summary
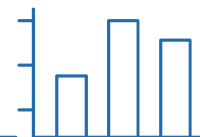
Subject completion

The following data includes students who completed the General subject or Alternative sequence (AS).

Note: All data is correct as at January 2025. Where percentages are provided, these are rounded to two decimal places and, therefore, may not add up to 100%.

Number of schools that offered Design: 236.

Completion of units	Unit 1	Unit 2	Units 3 and 4
Number of students completed	3,883	3,682	3,246

Units 1 and 2 results

Number of students	Satisfactory	Unsatisfactory
Unit 1	3,488	395
Unit 2	3,420	262

Units 3 and 4 internal assessment (IA) results

Total marks for IA
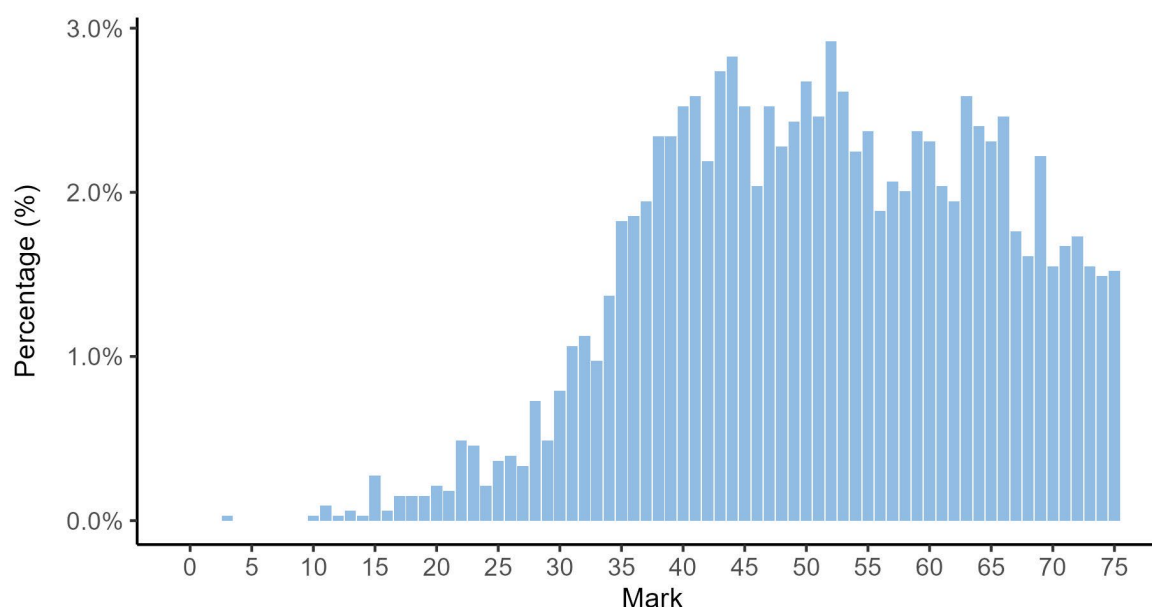
IA1 marks

IA1 total
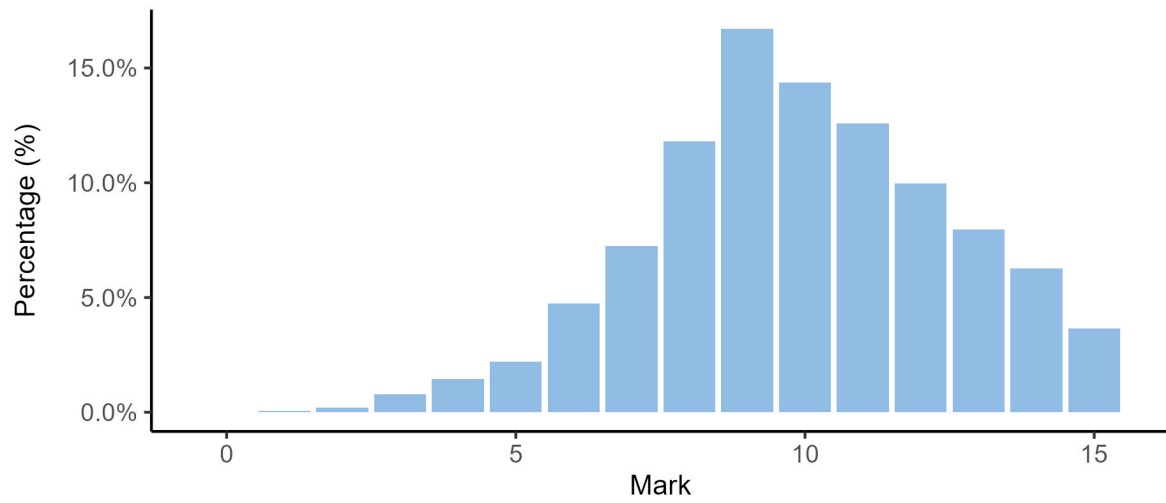
IA1 Criterion: Devising
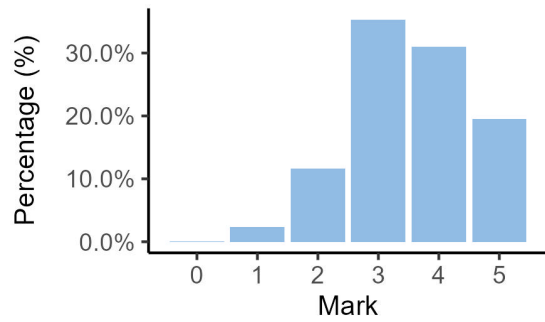
IA1 Criterion: Synthesising and evaluating
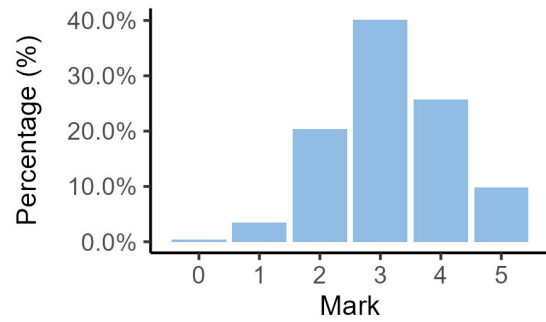
IA1 Criterion: Representing and communicating
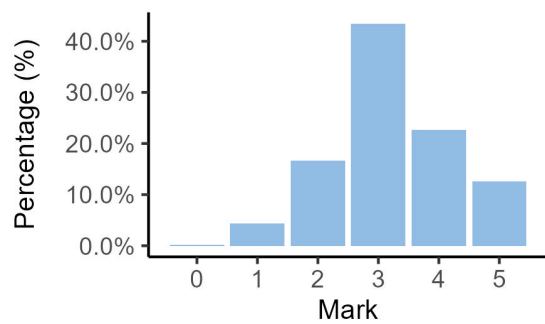
IA2 marks

IA2 total
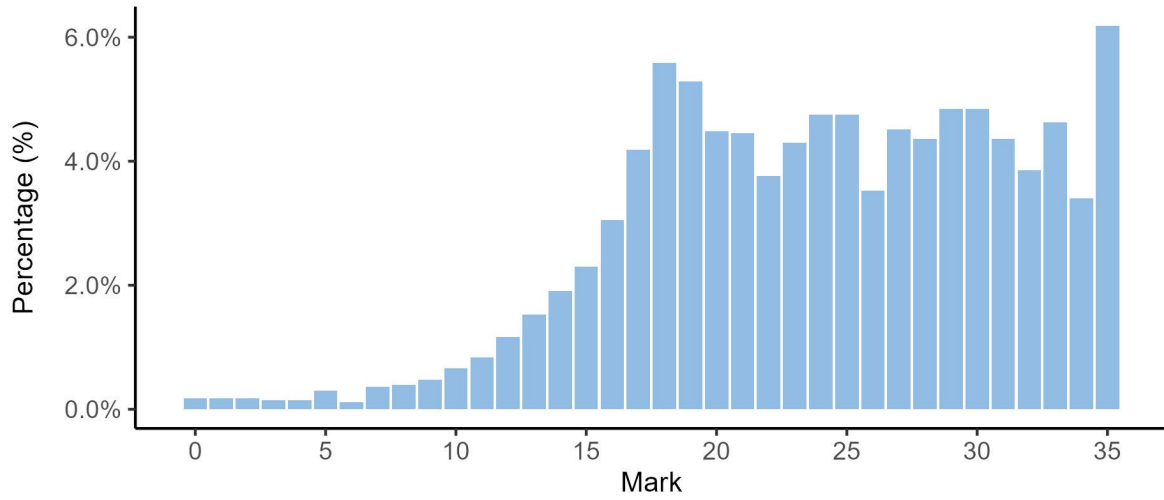
IA2 Criterion: Exploring
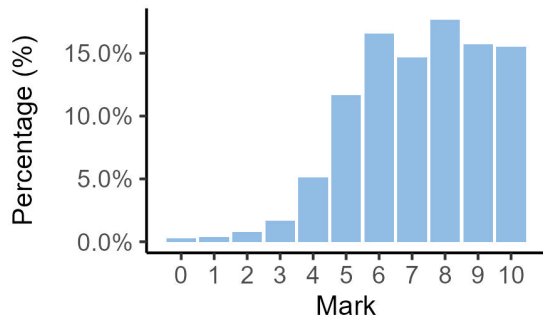
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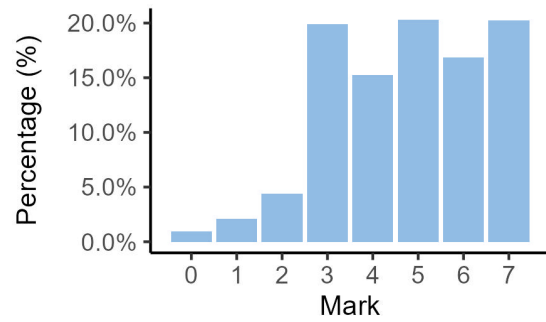
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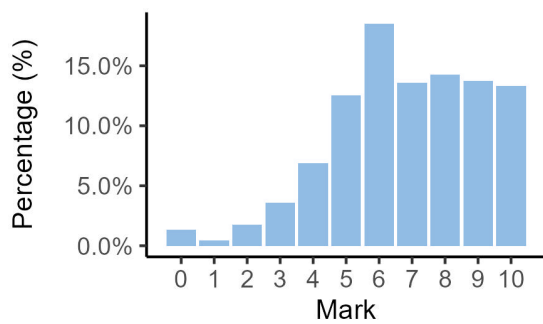
IA2 Criterion: Representing and communicating
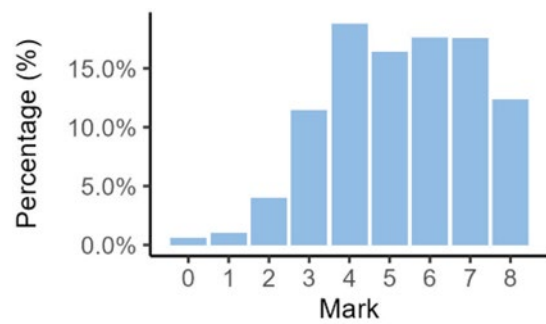
IA3 marks

IA3 total
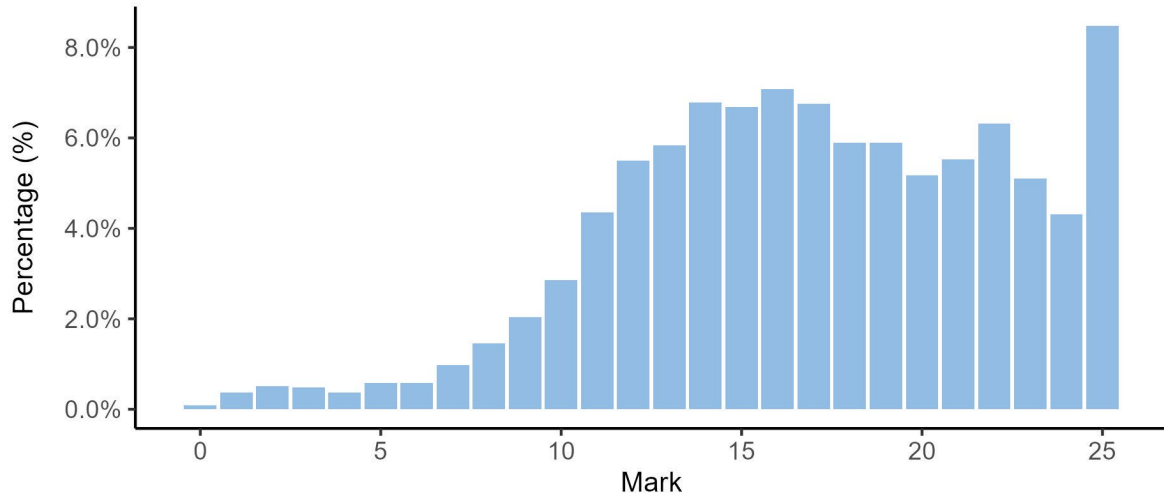
IA3 Criterion: Exploring
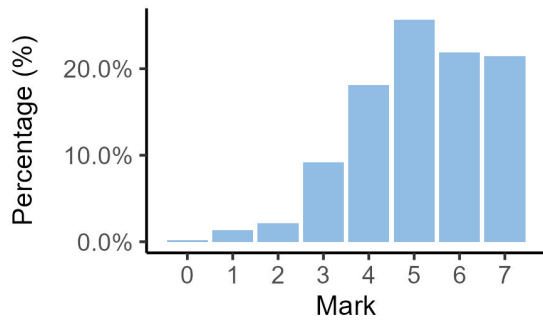
IA3 Criterion: Devising
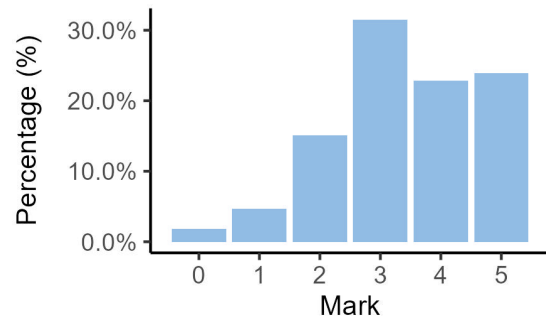
IA3 Criterion: Synthesising and evaluating
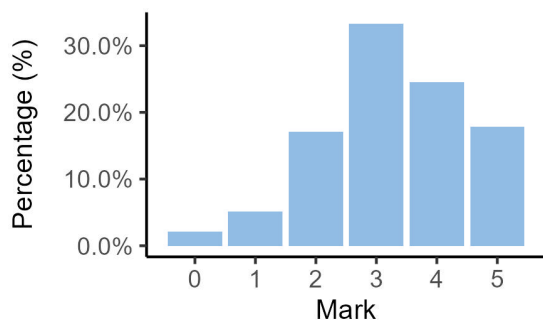
IA3 Criterion: Representing and communicating
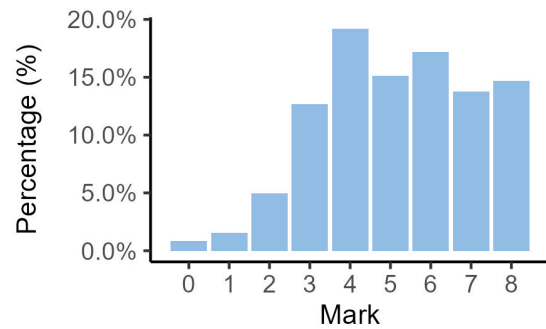
External assessment (EA) marks
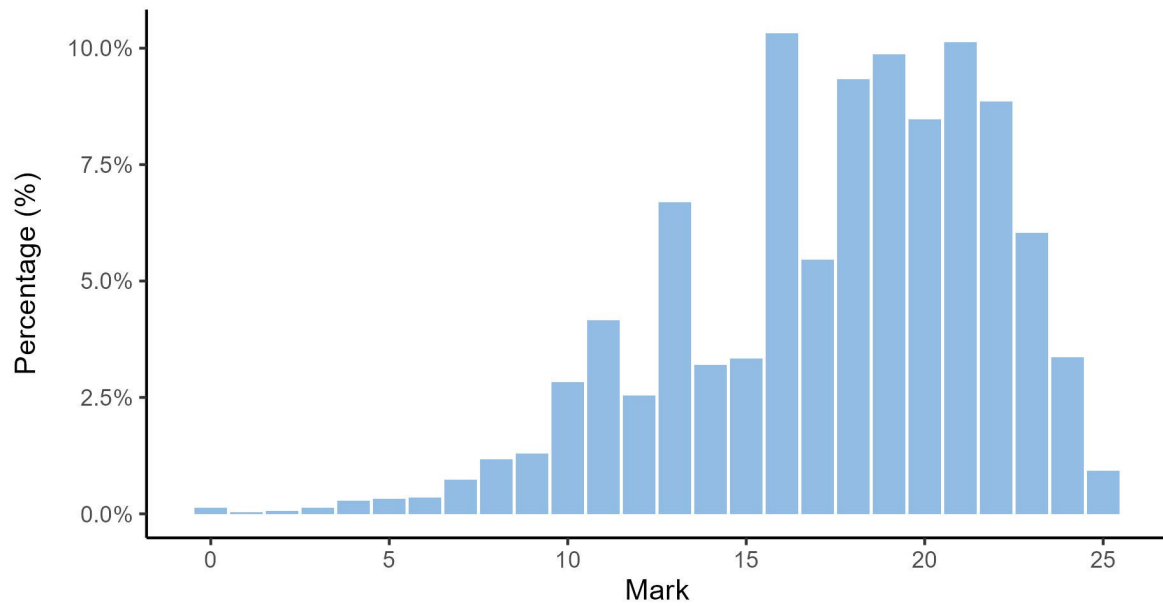
Final subject results

Final marks for IA and EA
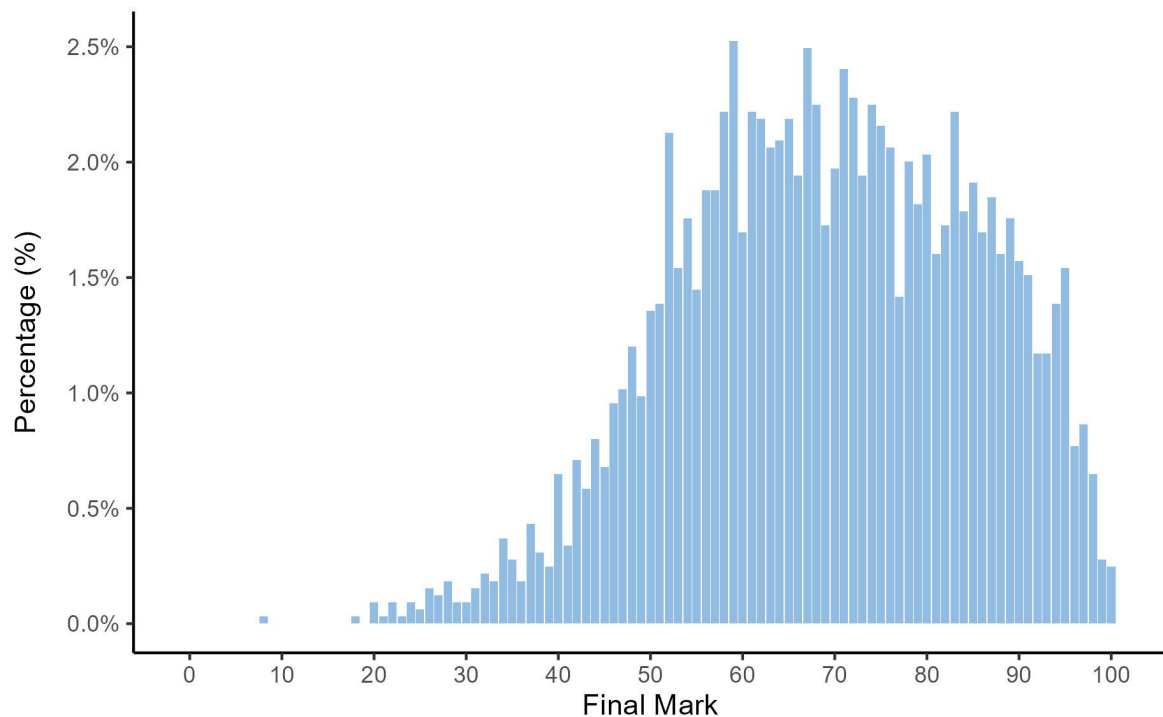
Grade boundaries

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	100–85	84–67	66–45	44–17	16–0

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	648	1,173	1,212	212	1

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 assessment. 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 v6.0*, Section 9.5.

Percentage of instruments endorsed in Application 1

Instruments submitted	IA1	IA2	IA3
Total number of instruments	236	236	235
Percentage endorsed in Application 1	34	59	78

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 v6.0*, Section 9.6.

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	232	1,552	51	67.24
2	233	1,562	17	86.70
3	232	1,535	3	90.52

Internal assessment 1 (IA1)

Examination — design challenge (15%)

The assessment is a supervised test that assesses the application of a range of cognitions to a provided design problem.

Student responses must be completed individually, under supervised conditions, and in a set timeframe. Stimulus is seen prior to the examination.

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	95
Authentication	0
Authenticity	5
Item construction	48
Scope and scale	77

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that:

- included seen stimulus describing
  - a specific identifiable person as the stakeholder
  - the stakeholder's attitudes, expectations, motivations, and experiences about a range of needs and wants
- included an unseen design brief with supporting images, e.g. a floor plan that, if included in the seen stimulus, would compromise the purpose of the technique.

Practices to strengthen

It is recommended that assessment instruments:

- provide students with the opportunity to
  - demonstrate empathy by designing for a stakeholder from a different demographic from their own
  - come to the examination with an understanding of who they are designing for, based on the seen stimulus
- include an unseen design brief that explicitly states what is to be designed for the stakeholder, e.g. use the stimulus to design packaging for Rik from RTK Packaging

- provide, on the seen stimulus, visual and written information that does not
  - allow students to predict what they will be designing for the stakeholder prior to the supervised examination time
  - include images of possible solutions to the problem that can be copied by students in the supervised examination time
- include design criteria that
  - are based on the aesthetic, technical, social or cultural features that define the human-centred design (HCD) problem
  - intrinsically relate to the relevant five principles of good design identified in the syllabus without explicitly listing them as separate criteria
  - are succinct, with one clear requirement per criterion
  - are limited in number to suit the scale of the task and time available to devise and evaluate ideas.

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	3
Language	0
Layout	1
Transparency	1

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that:

- used the elements and principles of visual communication to ensure the layout of the stimulus was clear and legible
- featured high-resolution images in the seen stimulus that were respectful to the stakeholder being represented.

Practices to strengthen

There were no significant issues identified for improvement.

Additional advice

- Ensure that permission is obtained to use and share photographs of people in the seen stimulus, particularly if they feature students at the school.
- Teachers should create an expected response to the examination to confirm the validity of the stimulus and design brief.
- Teachers should have a colleague in their community of practice work the paper to confirm students can complete the task in the one-hour timeframe.

- A clean copy of the seen stimulus should be provided on the day of the examination. Work must be completed individually in the supervised time. The seen stimulus that was provided 24 hours in advance cannot be brought into the examination, as it may contain work such as notes or sketches generated prior to the supervised time.

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	Devising	84.91	15.09	0.00	0
2	Synthesising and evaluating	82.33	17.24	0.43	0
3	Representing and communicating	82.76	16.38	0.86	0

Effective practices

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

- for the Devising criterion, marks were awarded when responses demonstrated

    – sketched ideas that included details with clear relevance to the stimulus information, and insightful understanding of the stakeholder

    – understanding of the design problem, e.g. each idea was sketched in detail to show insight and understanding of at least one of the design criteria. Across the range of ideas, the details showed that all the design criteria had been considered

    – divergent thinking, e.g. a range of ideas showed different ways of responding to the problem where ideas were not all variations of one central thought

- marks were awarded in consideration of the quality of ideas as described in the characteristics rather than simply focusing on the quantity of ideas, e.g. ideas were clearly relevant to at least one design criterion and demonstrated perceptive application of the stakeholder's needs and wants shown on the stimulus. The most perceptive ideas appear to be the result of students effectively using the 24 hours with the seen stimulus to research and understand the stakeholders they should be designing for in the one hour exam.

Practices to strengthen

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

- when matching evidence to characteristics for the Synthesising and evaluating criterion at the upper performance level, attention should be given to ensuring

    – the evaluation of the ideas is annotated beside the relevant sketches

- across the range of ideas, the annotations include strengths, limitations, and implications using skilful judgment to identify the attributes most relevant to the design criteria

- responses demonstrate discerning refinements that improve ideas, e.g. sketches across the pages show changes and modifications to design ideas that improve how the ideas satisfy one or more design criteria

- the proposed design concept shows an integration of the best characteristics of multiple ideas together with information drawn from the stimulus about the stakeholders and relevant HCD subject matter, e.g. the addition of wheels, originally shown on a different idea, to create a mobile product

- responses demonstrated a convergent phase that used the evaluation of the strengths, limitations and implications of the ideas to make refinements. Strategies such substitute, combine, adapt, modify, put to another use, eliminate and reverse (SACAMPER) are identified in the syllabus as examples of divergent thinking strategies to support the devising of ideas, not the convergent phase

- when matching evidence to characteristics for the Representing and communicating criterion at the upper performance level, teachers ensure ideation sketches demonstrate sophisticated representation of ideas that do not require explanatory text, e.g. include

  - the use of line, colour, tone and texture to show the form of the ideas

  - arrows to show movement and relationships

  - sections, cutaways and scaled enlargements to show the attributes or detail of the ideas.

Samples

The following excerpt has been included to demonstrate evidence of the Devising criterion at the upper performance levels. The first of two pages of devised ideas, it has been included to show perceptively devised ideas in response to a HCD problem, which required students to develop portable seating for a person with back pain.

The excerpt shows:

- ideas that demonstrate insightful understanding of the stimulus information about the stakeholder, e.g. the ideas consider the comfort of the stakeholder based on the ergonomic information that was provided

- different points of view or flexibility of creative ideas. Every idea is a credible seat as required by the design problem, but the student has shown flexibility in the different approaches to the design of seating, e.g. traditional, collapsible concertina and inflatable forms.

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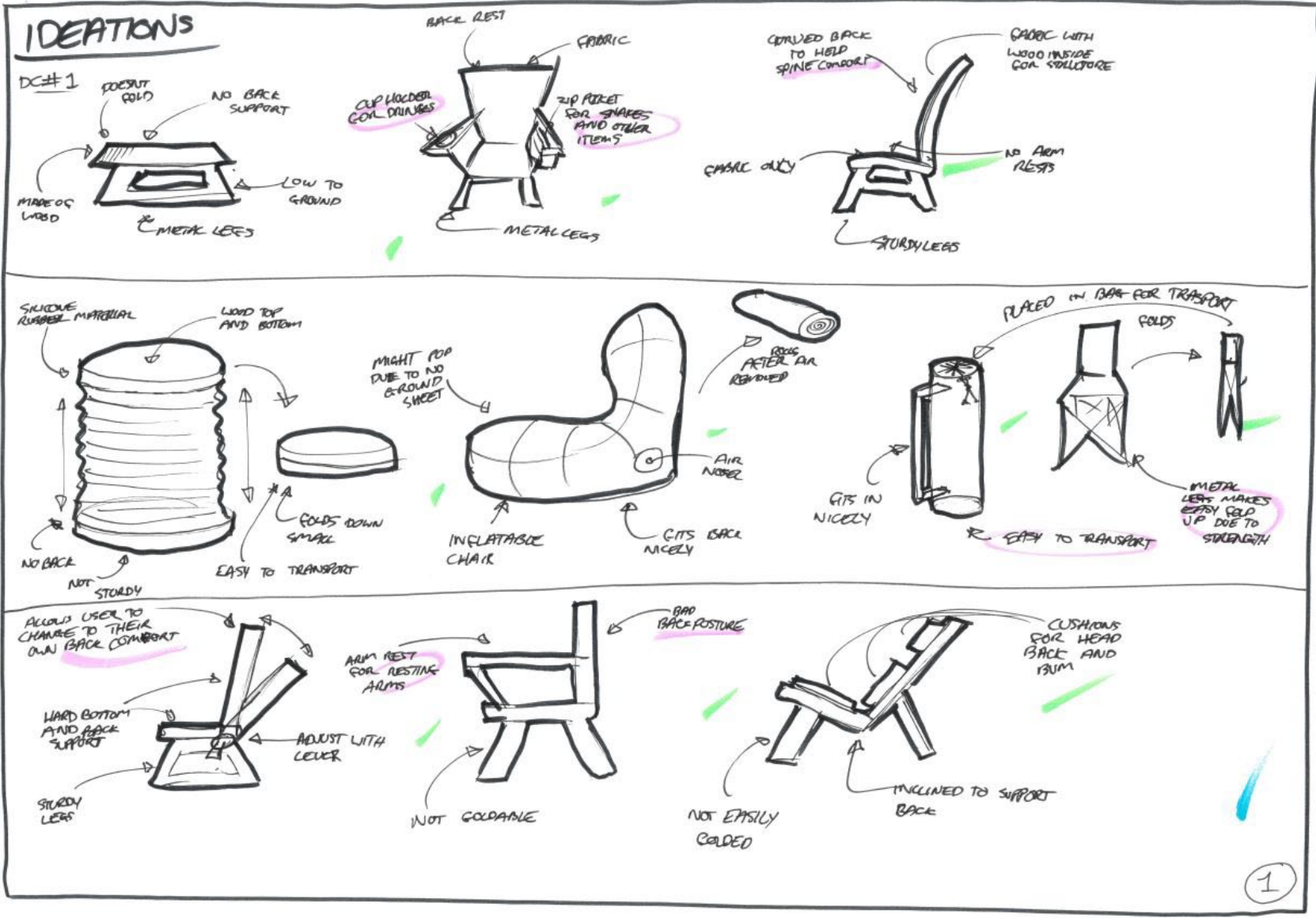
Additional advice

- Teachers should encourage students to use planning time to understand the design problem and the related stakeholder information on the stimulus. A mind map or similar schematic sketch, on the planning page, may be used to assist with this process. It is important that unpacking the design problem is on the planning page, not the first page of the response.

- The first page of the response should be the start of the devising process, showing representations of ideas. It may be appropriate to use schematic sketching to record initial thoughts about ideas prior to devising ideas using ideation sketches.

- Teachers should encourage students to use the specified four pages for their response (Syllabus section 4.4.1), the first two pages for the divergent phase and the final two pages for the convergent phase. Evaluation should be evident across the first three pages as annotations on the sketches.

- Additional pages completed in the supervised time of 60 minutes can be marked.

Internal assessment 2 (IA2)

Project (35%)

The assessment focuses on a design process that requires the application of a range of cognitive, technical and creative skills and theoretical understandings. Students document the iterative process undertaken to explore and develop a response to a stakeholder's need or want.

The response is a coherent work that may include drawings, low-fidelity prototypes, written paragraphs, notes, photographs, video and spoken presentations.

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	55
Authentication	4
Authenticity	23
Item construction	9
Scope and scale	25

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that:

- directed each student to identify a different stakeholder, from a particular demographic, that was
  - physically accessible to the student
  - able to interact with the student throughout the explore and develop phases
  - demographically different from a senior school student
- provided a clear and concise HCD context derived from the unit description.

Practices to strengthen

It is recommended that assessment instruments:

- use a HCD context as the teacher-facilitated direct stimulus rather than a guiding question
- include the task instruction from the syllabus for students to 'identify a stakeholder and apply the HCD process in response to their needs and wants' (Syllabus section 4.4.2)

- include the correct and complete syllabus specifications for Parts A, B and C in the task instructions

- provide the opportunity for students to apply designing with empathy techniques to identify design problems. Remove any reference in the context and task to possible problems the demographic group may experience.

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	1
Language	1
Layout	0
Transparency	0

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that:

- used inclusive language to appropriately describe a stakeholder group

- included a succinctly expressed context statement that clearly described the focus on HCD.

Practices to strengthen

There were no significant issues identified for improvement.

Additional advice

- Include an initial Part B drafting point to provide feedback on a close-to-final design brief before students commence the develop phase.

- Clearly show that each of the three parts of the response are only drafted once. Where Part B is drafted first, it cannot be included in any additional drafting of Part C and Part A.

- Part A is a visual documentation of the design process and the required 10–12 pages should be compiled and drafted at the conclusion of the design process, after the design brief (Part B) and design proposal (Part C) have been completed and drafted.

- Avoid providing a single organisation or stakeholder for the class. This prevents each student being able to produce a unique response by limiting the application of designing with empathy techniques, reducing the range of design problems and the opportunity for students to seek feedback on ideas from their stakeholder when evaluating ideas in the develop phase.

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	Exploring	93.99	5.15	0.86	0.43
2	Devising	96.57	3.00	0.43	0.00
3	Synthesising and evaluating	96.14	3.86	0.00	0.00
4	Representing and communicating	91.85	7.73	0.43	0.00

Effective practices

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

- for the Devising criterion, marks were awarded when the

  – responses showed ideas devised using physical low-fidelity prototyping, e.g. a range of handles formed from plasticine that the stakeholder tested

  – responses included multiple ideas that were a credible response to the problem, e.g. where the problem was to design a gardening tool to assist an older stakeholder, Part A contained three pages of different sketches of gardening tools and photos of low-fidelity prototypes the stakeholder trialled

  – student had clearly stated in their design brief what they were designing for their stakeholder, e.g. they had described the features and requirements of a tool to assist an older person to work in their garden. Where the design brief vaguely referred to a requirement to design a product, service or environment for a stakeholder, the resultant evidence of devising typically lacked coherence and relevance.

Practices to strengthen

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

- when matching evidence to characteristics for the Representing and communicating criterion at the upper performance level, attention should be given to ensuring

  – responses adhere to the specifications for Part C (Syllabus section 4.4.2). The recorded design proposal must include a visual presentation of the final design concept and a 2–3 minute spoken evaluation for the stakeholder audience. Less successful responses included a recall of the design process already included in Part A

- when matching evidence to characteristics for the Synthesising and evaluating criterion at the upper performance level, attention should be given to ensuring responses demonstrate application of Unit 3 subject matter by

  – recording stakeholder feedback on the strengths, limitations and implications of ideas

  – showing collaboration with stakeholders throughout the convergent phase, e.g. ideation sketches and physical low-fidelity prototypes are refined through stakeholder testing and feedback.

Samples

The following excerpts have been included to demonstrate evidence of the Exploring criterion at the upper performance levels:

- Excerpt 1 shows an example of insightful analysis informed by observation and deduction. The student has interviewed the stakeholder and recorded their attitude about interactions with people while travelling overseas for work (highlighted in green and yellow)

- Excerpt 2 shows an example of the identification of significant features through the application of designing with empathy subject matter to determine the stakeholder's most important social, cultural, economic, aesthetic and technical requirements. Sketches have been used to represent the identified needs, and the stakeholder feedback has been recorded in the yellow boxes.

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

Excerpt 1

① Alternative to airplane blanket

Poncho blanket ↳ sits better on person instead of sliding around off

1. 5/10

Not aesthetically pleasing
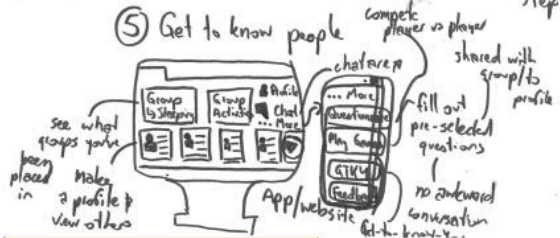Moveability

Sitting on - causes issues?
Sizing?

② Luggage

zippers→
collapsible basket for items
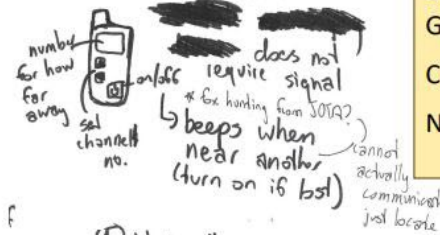inside ↳ more compartments

2. 9/10
Loves storage
4 wheels – good
Easy access to items
Missing "pizzazz" (?)

③ Communications

numbers for how far away
on/off
sel channel no.
does not require signal
* for hunting from JOTA?
↳ beeps when near another (turn on if lost)
cannot actually communicate, just locate

3. 6/10
Good in theory
Comms is key (?)
Not that good

④ Neck pillow

wraps around – more adjustable
material ↳ gel beads ↳ less irritating noise 'smooth' texture

4. 7/10
Sound of beads?
Texture/feel
What if it breaks?
Shape helps neck
Useful

⑤ Get to know people

competes player vs player
chat area
shared with group/to profile
Group to Shaping
Group Activities
Chat
... More
... More
Questions
Play Game
GTKY
Feedback
fill out pre-selected questions
no awkward conversation
App/website get-to-know-you
see what groups you've been placed in
make a profile & view others

5. 8/10
Nice icebreaker without meeting
Convo starter ideas

⑥ Ear Plugs

specifically designed for airplane pressure

6. 5/10
Hates feeling of earplugs
Good in theory
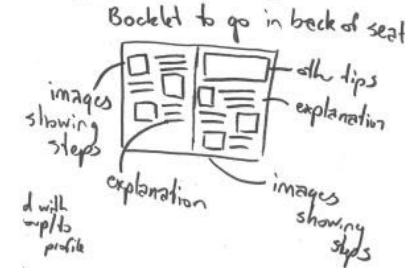
7. 4/10
Disruptive to other passengers
Good to remove pains

⑦ Airline Stretches
Booklet to go in back of seat

images showing steps
oth tips
explanation
explanation
images showing steps
d with up/to profile

Additional advice

- A successful response to this assessment instrument requires interaction with stakeholders throughout the process. Designing with empathy techniques, such as observations, interviews and experiences, are used to avoid making assumptions about stakeholders' needs and wants in the exploring phase. In the develop phase there should be evidence of collaboration with stakeholders to test and refine ideas against the design criteria.

- Students need to select a stakeholder that is willing to be involved in the project from start to finish to ensure primary data can be collected and designing with empathy techniques can be applied beyond an initial interview.

- Where a student has not provided a Part C, or there is a blank MP4 file provided, annotations would be required on the ISMG beside the characteristics related to

  - evaluation of the design concept (Synthesising and evaluating criterion)

  - synthesis to propose a design concept (Synthesising and evaluating criterion)

  - decision-making about spoken features and visual elements, and principles to present a design proposal for an audience (Representing and communicating criterion).

- Responses must follow the IA2 specifications for Part C. This is a 2–3 minute spoken pitch for stakeholders that evaluates how well the design concept satisfies the design criteria. It is not necessary for the process of exploration and development to be explained in this presentation.

- Part B the design brief and Part C the design proposal are prepared for the stakeholder and are the outcome of the design process undertaken by the students. Part A is a visual documentation of the design process compiled at the end of the project from the authentic design work. Its purpose is to provide additional evidence of those characteristics not easily identified in the design brief and design proposal.

- Teachers should support students' understanding of Part A and instruct them to

  - select a maximum of 12 A3 pages that may include scanned pages of

    - annotated photographs

    - schematic diagrams of analysis

    - sketches and notes about possible design problems

    - ideation sketches with annotated evaluation

    - notes that document stakeholder feedback

  - ensure scanned images remain clear and legible

  - avoid redrawing and refining the quality of sketches as this has resulted in decisions to omit important evidence in students' devising

  - avoid reformatting the design work into a high-quality design folio. Part A is not assessed against the Communication objective. The authentic quality of the exploring and developing is negatively impacted when it is reformatted and refined into a presentation folio.

Internal assessment 3 (IA3)

Project (25%)

The assessment focuses on a design process that requires the application of a range of cognitive, technical and creative skills and theoretical understandings. Students document the iterative process undertaken to explore and develop a response to a stakeholder's need or want. The response is a coherent work that may include drawings, low-fidelity prototypes, written paragraphs, notes, photographs, video and spoken presentations.

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	35
Authentication	3
Authenticity	17
Item construction	5
Scope and scale	2

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that:

- included a clear and concise sustainable design context derived from the Unit 4 description and subject matter

- included the task instruction from the syllabus for students to 'identify an opportunity and redesign a product, service or environment to improve its sustainability' (Syllabus section 5.5.1).

Practices to strengthen

It is recommended that assessment instruments:

- use the context statement as the teacher-facilitated direct stimulus rather than a guiding question

- ensure the task is student-directed so that

  - each student in the cohort is free to identify a different opportunity, e.g. students should not all be directed to the opportunity to reduce e-waste

- students make all decisions as they apply the explore and develop phases of the design process to redesign something of their choice to be more sustainable

- include the correct syllabus specifications for Parts A, B and C in the task instructions, to ensure the differences between IA2 and IA3 are followed. For instance, IA3 does not require

  - primary data from stakeholders in the explore phase

  - low-fidelity prototyping during the develop phase

  - a spoken pitch.

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	1
Layout	1
Transparency	0

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that:

- used syllabus terminology to appropriately describe a sustainable context

- included a succinctly expressed context statement that clearly described the focus on sustainable redesign.

Practices to strengthen

There were no significant issues identified for improvement.

Additional advice

- Include an initial Part B drafting point to provide feedback on a close-to-final design brief before students commence the develop phase.

- Clearly show that each of the three parts of the response are only drafted once. Where Part B is drafted first it cannot be included in any additional drafting of Part C and Part A.

- Part A is a visual documentation of the design process and the required 8–10 pages should be compiled and drafted at the conclusion of the design process, after the design brief (Part B) and design proposal (Part C) have been completed and drafted.

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	Exploring	96.55	3.45	0	0
2	Devising	96.55	3.45	0	0
3	Synthesising and evaluating	96.55	3.45	0	0
4	Representing and communicating	93.53	6.47	0	0

Effective practices

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

- for the Exploring criterion, marks were awarded when responses showed

  - that students had identified a redesign opportunity in an area of their interest, e.g. issues with e-waste

  - insightful analysis of the linear life cycle of products related to the opportunity, e.g. considering the economic, social and ecological impacts of mobile phones throughout their life cycle from manufacture to disposal

  - a discerning description of the features and constraints of a design problem, e.g. the aesthetic, social, cultural, economic and technical features identified in the analysis, their relationship to the three pillars of sustainability, and identified legal and physical constraints.

Practices to strengthen

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

- when matching evidence to characteristics for the Representing and communicating criterion at the upper performance level, attention should be given to ensuring

  - responses include the use of ideation and schematic sketching to progress ideas, e.g. if a refinement is the addition of a serviceable, modular component then the sketches should show the way that component can be removed and refitted

  - annotations and notes on the sketches are limited to labels or evaluative statements. Ideas must be devised using visual representations, not described using words

  - responses demonstrate discerning decision-making about the use of visual communication to promote the design concept to stakeholders using illustrations on a single A3 page or equivalent if in a digital form.

Samples

The following excerpts have been included to demonstrate evidence of the Exploring criterion at the upper performance levels. Excerpts 1 and 2 are part of an A3 page of analysis that included images of existing designs, product life cycle data and the economic, social and ecological impacts of tents. The excerpts show an example of insightful analysis informed by observation and deduction and an understanding of relevant Unit 4 subject matter. The student has:

sourced data about a camping tent and identified the significant aesthetic, social, cultural, economic and technical features related to life cycle and sustainability

interviewed a stakeholder to identify the features of a tent that may improve how stakeholders would accept the redesign opportunity.

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

| **Excerpt 1** | **Excerpt 2** |

Additional advice

- Students are required to provide assessable evidence of the explore and develop phases of the design process as per the specifications for Part A (Syllabus section 5.5.1). Teachers should advise students to complete Parts B and C prior to selecting a maximum of 10 pages for Part A. When compiling the scanned pages of sketches, use a resolution high enough to ensure images remain clear and annotations are large enough to be legible.

- Teachers must ensure responses adhere to the specifications for Part C (Syllabus section 5.5.1). A spoken pitch is not required.

- The student decides on the design opportunity and subsequent redesign problem. Students have the freedom in this assessment to pursue an area of their interest and make their own decisions about what they wish to redesign. However, the success of a design is dependent on stakeholders' acceptance and use of the designed solution. Therefore, it is important that students are encouraged to identify possible stakeholders, consult with them and deliver the design proposal to them as a target audience (Syllabus section 5.5.1).

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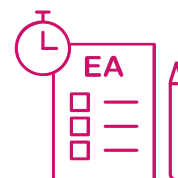
External assessment (EA) is developed and marked by the QCAA. The external assessment for a subject is common to all schools and administered under the same conditions, at the same time, on the same day.

Examination — design challenge (25%)

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 a single question (34 marks) that assessed subject matter from Unit 4. The question was derived from the context of sustainable design and required students to use the develop phase of the design process to respond to a provided design brief and stimulus.

The stimulus was a single A3 page and included a short, written description of the problem, design criteria and visual information, which provided contextual information about the problem and links to Unit 4 subject matter.

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.

Effective practices

Overall, students responded well when they:

- demonstrated application of the develop phase of the design process across the four pages of the response book

- commenced their response with two pages of sketched ideas in response to the problem

- understood and responded accurately to the question, to redesign an item of living room furniture, by devising different ways one selected furniture item could be modified. Less effective responses proposed one change to many different furniture items, e.g. adding storage to a chair, table, lounge

- demonstrated an understanding of the relationship between the design criteria and Unit 4 subject matter, including

  - circular design — to create more value by enabling multiple uses and users of a design

  - knowledge of how design decisions either encourage or discourage obsolescence, including

    - function

    - quality

    - desirability

- demonstrated, through the visible attributes of their ideas and design concept, perceptive understanding of relevant subject matter, e.g. showing a change in the form of a chair to include a serviceable or replaceable component.

Practices to strengthen

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

- developing strategies to assist students to understand how to interpret the question and apply sustainable design subject matter through the detail in their devised ideas. This examination required students to discerningly apply subject matter to a specific design task. Less successful responses recalled a range of Unit 4 subject matter about sustainable design and circular design methods and devised broad and general ideas, e.g. the use of a vending machine to assist with the redistribution of used items to new users

- informing students that

  - Design is a developmental course of study. Content introduced in Units 1 and 2 provides the foundation for the designing that is applied through the context of sustainability in Unit 4, e.g. the elements and principles of visual communication introduced in Unit 1

  - an evaluation of the design concept is not required. The QCAA develops the examination using the Summative external assessment (EA): Examination — design challenge (25%) specifications (Syllabus section 5.5.2). These specifications only require ideas to be evaluated against design criteria to make refinements

- developing students' ability to refine ideas by making visual changes that improve how well ideas match the design criteria. Refinement decisions are identified by the markers in the visual work and do not have to be accompanied by written explanation, e.g. in high-level responses, the detail in the sketches clearly showed how the change related to the design criteria

- instructing students to

  - represent their ideas at a large enough size to show the unique, credible and detailed attributes that match the design criteria. It is through the visual detail represented in the ideas, not written notes, that evidence is provided of the student's insight and understanding of the design problem and Unit 4 subject matter

  - use more than the four pages if necessary. Students are not limited to the four A3 pages in the response book, which has a response space inside the border that is smaller than a standard A3 page. Additional pages can be used, and all pages of work completed under examination conditions will be marked.

Samples

Extended response

The following excerpts are from Question 1. It required students to use the stimulus to redesign an item of living room furniture to discourage obsolescence.

Effective student responses:

- devised a range of divergent ideas in response to the problem
- refined the ideas based on evaluation using the design criteria
- proposed a design concept that satisfied the three design criteria
- used sketches, with notes, to represent the ideas and design concept.

Excerpt 1 has been included:

- to show a wide range of divergent ideas in response to the problem. There are six distinct ideas sketched on the page. Each idea is visually represented with sufficient clarity, showing a variety of furniture with different functionality and features, e.g. adaptability, hidden storage and multifunctionality. This shows significant flexibility in thinking.

Excerpts 2 and 3 have been included:

- to show the convergent phase of the design process where the iterative nature of the sketches demonstrates a clear progression of ideas. The sketched ideas are annotated with notes that communicate a critical evaluation of particular attributes of the ideas in relation to the criteria without unnecessary coding, e.g. DC# or SLI headings. High level responses demonstrate an ability to visually represent design decisions with minimal use of text. For example
    - on the right-hand side of Excerpt 2, the student states 'a rounder, more organic design could give beach vibes…' followed by a sketch showing a new form of the chair with the statement 'more organic form, but looks more sci-fi than beach'
    - in Excerpt 3, the chair has been refined with rattan sides and finally an aqua and white cushion pattern with the comment 'aqua and white give a "water and clouds" feel, perfect for beach theme'.
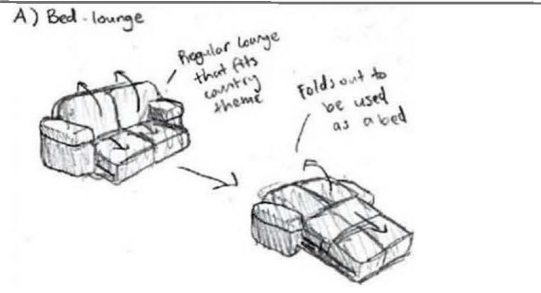
Excerpt 4 has been included:

- to show a design concept that is a coherent and logical outcome of the convergent phase. The concept satisfies all design criteria and is clearly proposed as the finalised design. The contextual representation of the concept emphasises its suitability for the coastal collection. There are no unnecessary labels or evaluative statements. Refined freehand methods show how the critical attributes satisfy the criteria through sophisticated application of line, colour, tone, contrast, shape, form, proximity, hierarchy and scale.
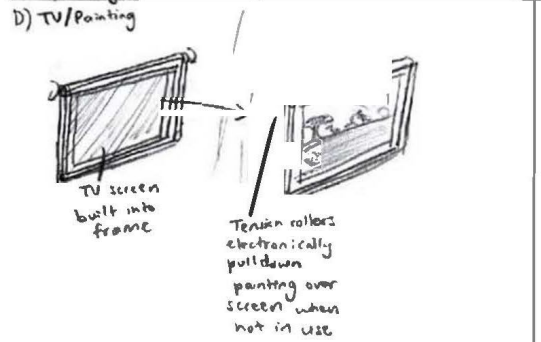
Excerpt 1

Excerpt 2

Folding, Rotating Coffee Table / Chair

Three folding sections

Frame holds upright and serves as base

Top rotates around centre

Sides fold into form sides of table

Smooth wooden table

Looks a bit silly and wouldn't be stable for a coffee table

Perhaps cushions on one side and hard on the other?
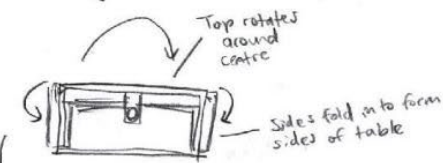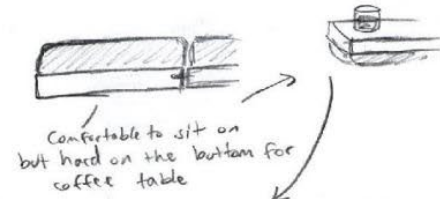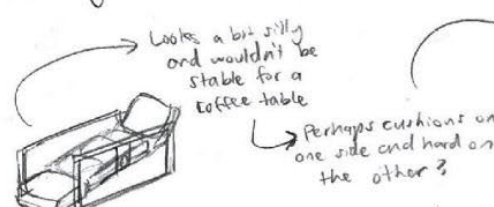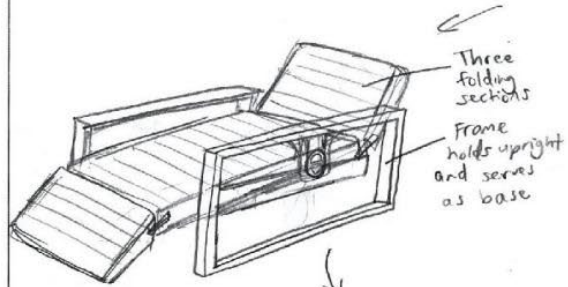
The planks could be changed to cushions instead?

Implication: Customers may not buy the product and the sustainability goal will not be achieved.

Comfortable to sit on but hard on the bottom for coffee table

Limitation: Doesn't follow specific theme (DC 2) Could it follow a beach theme? (relax by window vibes)

Wood? Bamboo?

Bamboo would be a sustainable material to use as well

A rounder, more organic design could give beach vibes and also make the design more comfortable
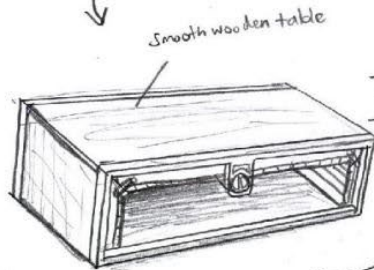
Strengths	Limitations
- Has two unique uses (DC 1)	- Looks uncomfortable
- Changes form (DC 3)	- Doesn't match a specific theme (DC 2)
	- Sharp edges could be dangerous

Button to electronically transform chair

More organic form, but looks more scifi than beach.
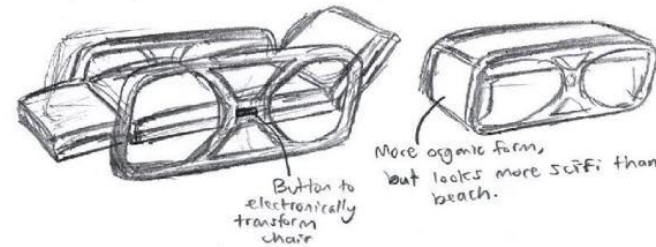
Excerpt 3

Function Designs

PAGE 3
Progressing Idea

Subject: Design 0048 EA

Limitation: The chair is too long to be able to rotate in the frame

In order to make the rotation possible, the pivot point must be moved higher

Additionally, the seat length must be changed

Max seat length

Can the folding parts be extended to make the seat longer?

Wider ends fill the gaps left by middle piece

The only problem is now the seat is too high and the armrests are useless

Perhaps a simple sliding mechanism can allow the seat to lower after rotation?

The higher pivot height gives more side length for the chair head

Under sides, the whole chair lowers and locks into place.

Pushing the button unlocks and allows the chair to raise

looks plain

Wood?

Mechanism can be covered

Suits beach theme better

Straw?

Strengths
- Has 'beach' theme (DC2)
- Two uses discourages obsolecence (DC1)
- Changes form (DC3)

Limitations
Middle pillar is somewhat unattractive
- Looks plain

Implication: People may not want in their house or may not buy

Can the shape be changed to be more stylish? Can textures, pattern or colour be added?

Beach colours: blue, aqua, green?

Wooden panel looks cool and hides mechanism underneath

Cushion patterns?

Aqua and white give a 'water and clouds' feel
- perfect for beach theme

Excerpt 4

PAGE 4
FINAL CONCEPT

Additional advice

- Teachers should

  – instruct students to use coloured markers in a way that maintains the detail in the sketches. Large dark-coloured blocks of colour do not scan well and may obscure important attributes of their ideas

  – encourage students to make clear notes on their ideas to ensure the evidence of evaluation is legible

  – remind students that the examination assesses the develop phase of the design process as described in Syllabus section 5.5.2. Therefore, it is reasonable to advise students to

    ▪ use the first two pages for divergent thinking and the final two pages for convergent thinking

    ▪ use notes to evaluate the first three pages of devised and refined ideas

    ▪ ensure sufficient visual detail is represented in the devised and refined ideas across the first three pages to demonstrate understanding of the design problem and Unit 4 subject matter. This evidence is used to support marks for the attributes of ideas

    ▪ clearly show a sketch of the final design concept on the final page and label it, Design concept.