

Design General Senior Syllabus 2019 v1.1

Subject report 2020

February 2021



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Introduction

The first summative year for the new Queensland Certificate of Education (QCE) system was unexpectedly challenging. The demands of delivering new assessment requirements and processes were amplified by disruptions to senior schooling arising from the COVID-19 pandemic. This meant the new system was forced to adapt before it had been introduced — the number of summative internal assessments was reduced from three to two in all General subjects. Schools and the QCAA worked together to implement the new assessment processes and the 2020 Year 12 cohort received accurate and reliable subject results.

Queensland's innovative new senior assessment system combines the flexibility and authenticity of school-based assessment, developed and marked by classroom teachers, with the rigour and consistency of external assessment set and marked by QCAA-trained assessment writers and markers. The system does not privilege one form of assessment over another, and both teachers and QCAA assessors share the role of making high-stakes judgments about the achievement of students. Our commitment to rigorous external quality assurance guarantees the reliability of both internal and external assessment outcomes.

Using evidence of student learning to make judgments on student achievement is just one purpose of assessment. In a sophisticated assessment system, it is also used by teachers to inform pedagogy and by students to monitor and reflect on their progress.

This post-cycle report on the summative assessment program is not simply being produced as a matter of record. It is intended that it will play an active role in future assessment cycles by providing observations and findings in a way that is meaningful and helpful to support the teaching and learning process, provide future students with guidance to support their preparations for summative assessment, and promote transparency and accountability in the broader education community. Reflection and research are necessary for the new system to achieve stability and to continue to evolve. The annual subject report is a key medium for making it accessible to schools and others.

Background

Purpose

The annual subject report is an analysis of the previous year's full summative assessment cycle. This includes endorsement of summative internal assessment instruments, confirmation of internal assessment marks and external assessment.

The report provides an overview of the key outcomes of one full teaching, learning and assessment cycle for each subject, including:

- information about the application of the syllabus objectives through the design and marking of internal and external assessments
- information about the patterns of student achievement in each subject for the assessment cycle.

It also provides advice to schools to promote continuous improvement, including:

- identification of effective practices in the design and marking of valid, accessible and reliable assessments
- identification of areas for improvement and recommendations to enhance the design and marking of valid, accessible and reliable assessment instruments
- provision of tangible examples of best practice where relevant, possible and appropriate.

Audience and use

This report should be read by school leaders, subject leaders and teachers to inform teaching and learning and assessment preparation. The report is to be used by schools and teachers to assist in assessment design practice, in making assessment decisions and in preparing students for external assessment.

The report is publicly available to promote transparency and accountability. Students, parents, community members and other education stakeholders can learn about the assessment practices and outcomes for General subjects (including alternative sequences and Senior External Examination subjects, where relevant) and General (Extension) subjects.

Report preparation

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

Subject data summary

Subject enrolments

- Number of schools offering the subject: 243.

| Completion of units | Unit 1 | Unit 2 | Units 3 and 4* |
|------------------------------|--------|--------|----------------|
| Number of students completed | 3464 | 3628 | 3668 |

*Units 3 and 4 figure includes students who were not rated.

Units 1 and 2 results

| Number of students | Satisfactory | Unsatisfactory | Not rated |
|--------------------|--------------|----------------|-----------|
| Unit 1 | 3269 | 187 | 8 |
| Unit 2 | 3411 | 210 | 7 |

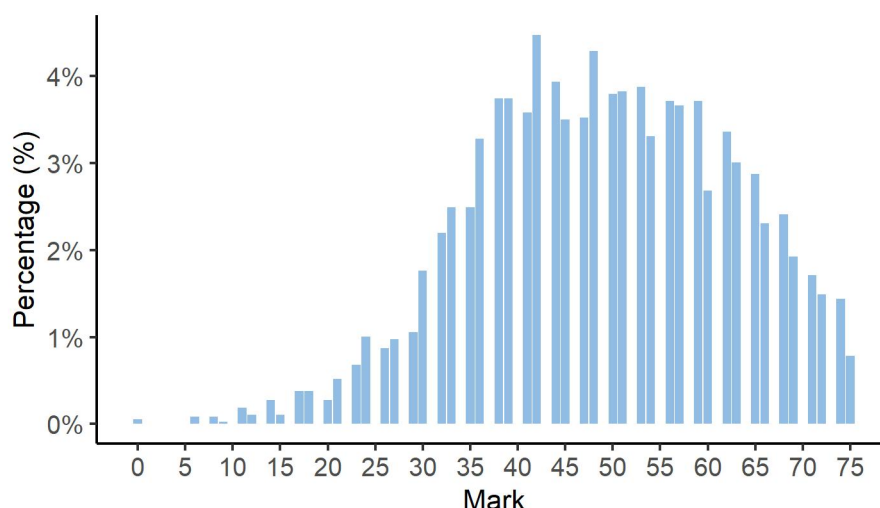
Units 3 and 4 internal assessment results

2020 COVID-19 adjustments

To support Queensland schools, teachers and students to manage learning and assessment during the evolving COVID-19 pandemic in 2020, the QCAA Board approved the removal of one internal assessment for students completing Units 3 and 4 in General and Applied subjects.

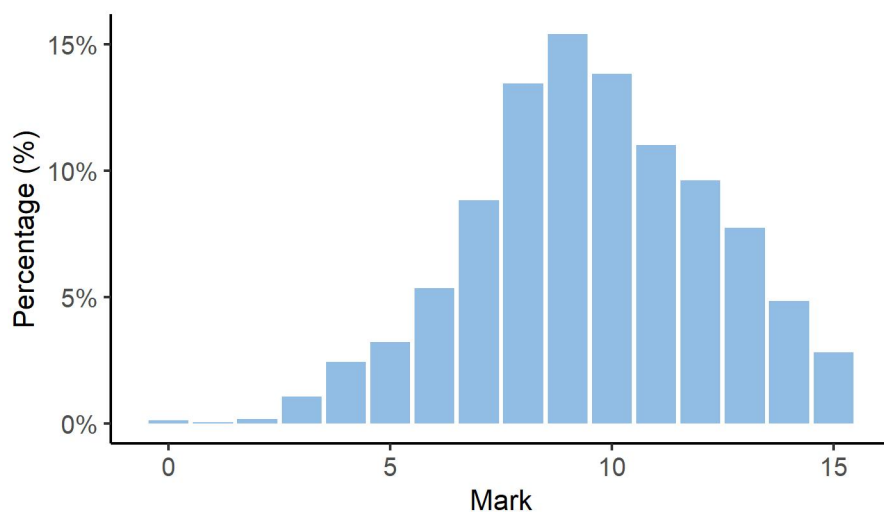
In General subjects, students completed two internal assessments and an external assessment. Schools made decisions based on QCAA advice and their school context. Therefore, across the state some instruments were completed by most schools, some completed by fewer schools and others completed by few or no schools. In the case of the latter, the data and information for these instruments has not been included.

Total results for internal assessment

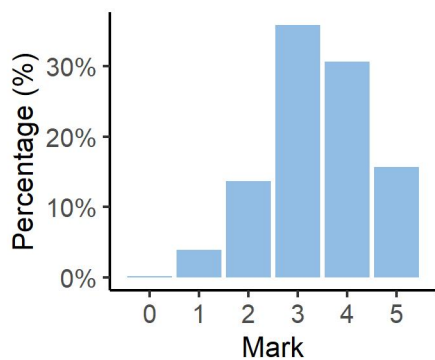


IA1 results

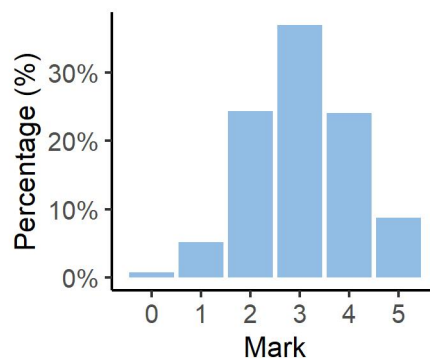
IA1 total



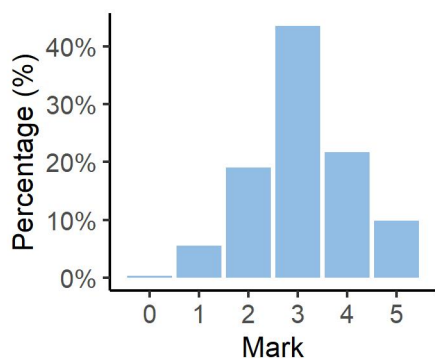
IA1 Criterion 1



IA1 Criterion 2

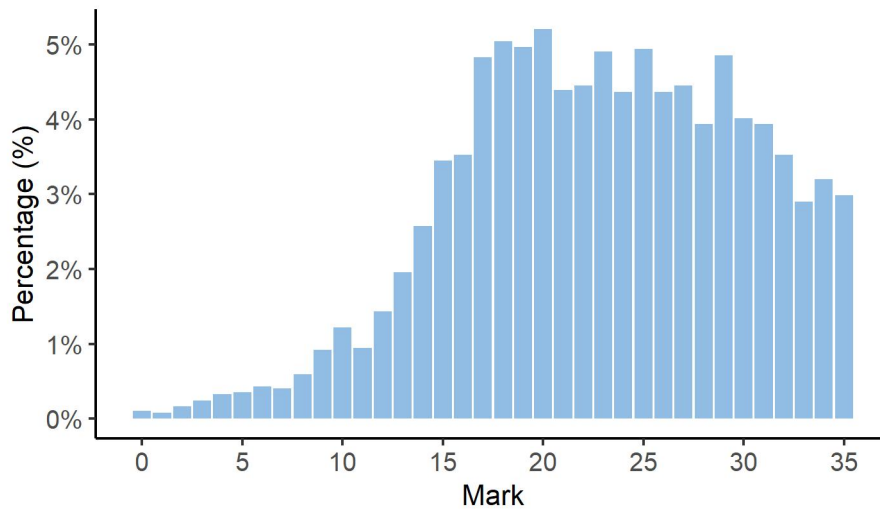


IA1 Criterion 3

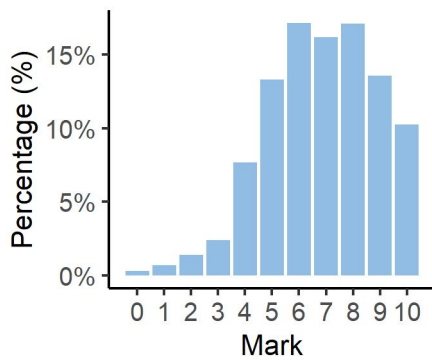


IA2 results

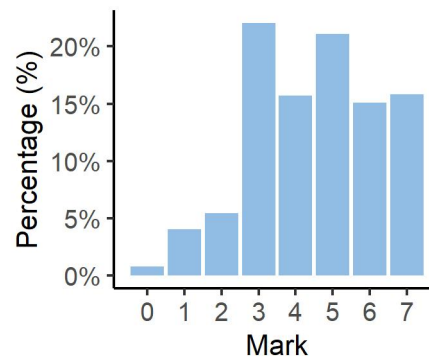
IA2 total



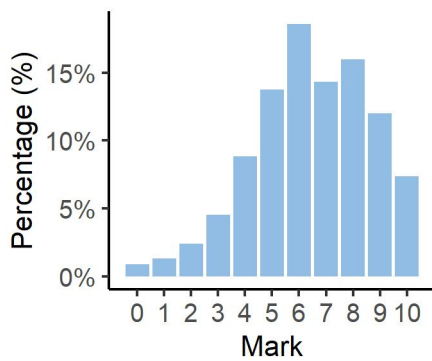
IA2 Criterion 1



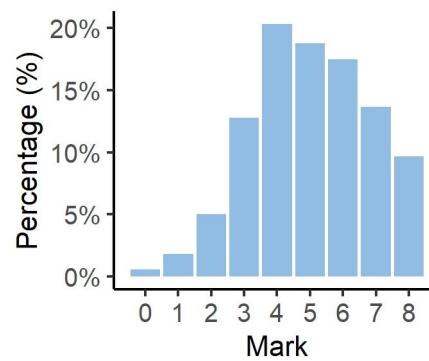
IA2 Criterion 2



IA2 Criterion 3



IA2 Criterion 4

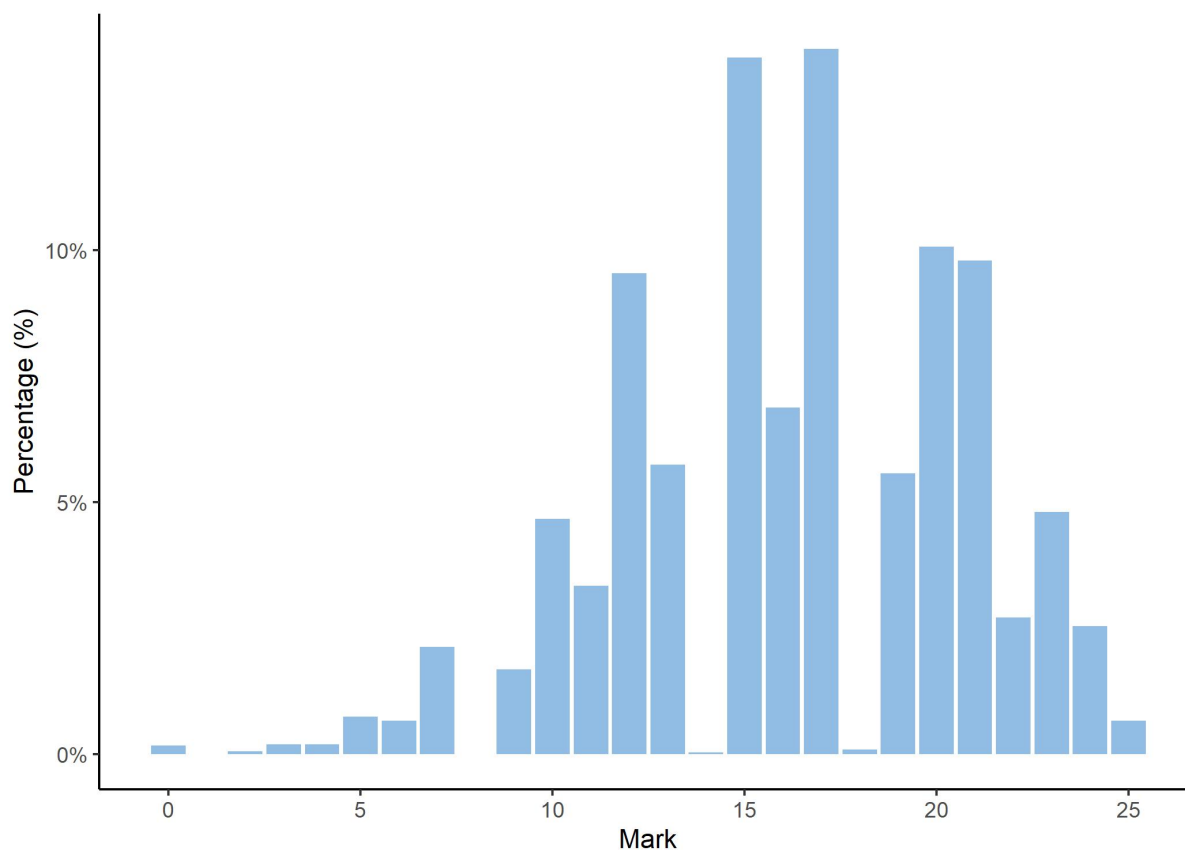


IA3 results

Due to COVID-19 pandemic adjustments, there were insufficient student responses to this instrument to provide useful analytics.

Due to COVID-19 pandemic adjustments, there were insufficient student responses to this instrument to provide useful analytics.

External assessment results



Final standards allocation

The number of students awarded each standard across the state are as follows.

| Standard | A | B | C | D | E |
|---------------------------|-----|------|------|-----|---|
| Number of students | 658 | 1490 | 1154 | 314 | 6 |

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 | 100–82 | 81–62 | 61–44 | 43–16 | 15–0 |

Internal assessment

The following information and advice pertain 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 sections 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 subject matter and to the assessment objective. Refer to the quality assurance tools for detailed information about the assessment practices for each assessment instrument.

Total number of items endorsed in Application 1

| Number of items submitted each event | IA1 | IA2 | IA3 |
|--------------------------------------|-----|-----|-----|
| Total number of instruments | 241 | 241 | 241 |
| Percentage endorsed in Application 1 | 41 | 59 | 45 |

Confirmation

Confirmation is the quality assurance process based on the attribute of reliability. Teachers make judgments about the evidence in students' responses using the instrument-specific marking guide (ISMG) to indicate the alignment of students' work with performance-level descriptors and determine a mark for each criterion. These are provisional criterion marks. The QCAA makes the final decision about student results through the confirmation processes. Data presented in the assessment decisions section identifies the level of agreement between provisional and final results.

Number of samples reviewed at initial, supplementary and extraordinary review

| IA | Number of schools | Number of samples requested | Supplementary samples requested | Extraordinary review | School review | Percentage agreement with provisional |
|----|-------------------|-----------------------------|---------------------------------|----------------------|---------------|---------------------------------------|
| 1 | 243 | 1232 | 257 | 176 | 41 | 94.39 |
| 2 | 242 | 1485 | 608 | 12 | 143 | 86.13 |

Internal assessment 1 (IA1)

Examination — design challenge (15%)

In Design, IA1 assesses Unit 3: Human-centred design (HCD) subject matter with 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 24 hours 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 practices

| Validity priority | Number of times priority was identified in decisions* |
|-------------------|---|
| Alignment | 90 |
| Authentication | 0 |
| Authenticity | 9 |
| Item construction | 20 |
| Scope and scale | 49 |

*Total number of submissions: 241. Each priority might contain up to four assessment practices.

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that featured:

- a human-centred design problem that aligned with Unit 3 subject matter
- task format that aligned to the Unit 3 IA1 specifications with seen stimulus and an unseen design brief.

Practices to strengthen

It is recommended that assessment instruments:

- include task instructions that align to the Unit 3 IA1 assessment objectives, e.g. the assessment objectives for this instrument only require the evaluation of ideas against design criteria to make refinements. The proposed design concept does not have to be evaluated
- include a design brief with appropriate scope and scale
 - providing a concise description of the features of a design problem
 - clarifying what product, service or environment is to be designed for the stakeholder/s
 - addressing the cognitions being assessed in the time available for a response, e.g. tasks that allow students to commence the develop phase from the information provided without a period of analysis to determine the scope of the problem
- describe design criteria based on the stakeholder/s' needs and wants that gives explicit information to enable the evaluation of the appropriateness of the design ideas

- include two pages of visual and written seen stimulus about stakeholder/s' attitudes, expectations, motivations, or experiences that will allow students to apply designing with empathy techniques in the develop phase by considering the stakeholder/s, not their own personal perspective
- include seen stimulus that does not compromise the 'unseen' design brief, e.g. providing images and text that show details of the problem or examples of possible solutions may lead to students responding with a single obvious response or a rehearsed response
- are trialled by a teacher to check the scope and scale prior to submission for endorsement
- use stimulus and design briefs that suit the local school context and are sufficiently different to textbook examples and QCAA samples to ensure students are able to demonstrate unique responses.

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 practices

| Accessibility priority | Number of times priority was identified in decisions* |
|------------------------|---|
| Transparency | 5 |
| Language | 6 |
| Layout | 3 |
| Bias avoidance | 5 |

*Total number of submissions: 241. Each priority might contain up to four assessment practices.

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that featured:

- consistent formatting and layout of text across the instrument to minimise distractors
- high resolution images in the visual stimulus that was accessible for students
- use of the elements and principals of visual communication to ensure the layout of the stimulus was clear and legible.

Practices to strengthen

It is recommended that assessment instruments:

- include a human-centred design brief written using clear, succinct language, accurate syllabus terminology and avoids specialist and colloquial language
- include clear task instructions that align to the specifications within the syllabus, syllabus objectives and ISMG
- avoid contexts that might disadvantage students due to factors such as gender, social or cultural background.

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 final results

| Criterion number | Criterion name | Percentage agreement with provisional | Percentage less than provisional | Percentage greater than provisional |
|------------------|--------------------------------|---------------------------------------|----------------------------------|-------------------------------------|
| 1 | Devising | 95.8 | 3.96 | 0.24 |
| 2 | Synthesising and evaluating | 92.38 | 7.33 | 0.29 |
| 3 | Representing and communicating | 95.0 | 4.17 | 0.83 |

Effective practices

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

- evidence matched characteristics of sophisticated representation of
 - ideas using fluent sequences of ideation sketches
 - a design concept using techniques such as line, tone and colour to differentiate between critical and non-critical elements.

Sample of effective practices

The following is an excerpt from a response that illustrates the characteristics for the Representing and communicating criterion at the performance level indicated. The sample may provide evidence of more than one criterion. The characteristics highlighted may not be the only time the characteristics have occurred throughout the response.

Representing and communicating (4–5 marks)
This response provides evidence of sophisticated representation of ideas and a design concept using fluent sequences of ideation and/or schematic sketching to progress understanding in the develop phase.

The image contains three hand-drawn sketches in red and black ink. The first sketch on the left is a perspective view of a rectangular container with five horizontal tiers and a lid. Annotations include 'handle to use lid' pointing to the lid and 'Plastic (see through)' pointing to the body. An arrow points from the lid to a second sketch on the top right, which is a top-down view of the lid with a handle. A third arrow points from the lid sketch to a third sketch on the bottom right, which is a detail of a handle with several small rectangular grips. Annotations for this sketch include 'handle', 'Below Grips', and 'Curved shape to make ergonomic for hands/fingers'.

Practices to strengthen

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

- when making judgments about the Devising criterion, the focus should be on differentiating between the quality of ideas, e.g. appropriate or perceptive devising. A focus on one particular characteristic or quality in the descriptor, such as how many ideas were devised, may not result in an accurate match of the student response to a performance-level descriptor
- when making judgments about the Synthesising and evaluating criterion, each of the descriptors should be addressed separately. Match the characteristics in the student work to the evaluation descriptor, highlight the match and then proceed to matching the synthesis characteristics
- matching the evaluation characteristics requires a two-step process. Firstly, identify the quality of the evaluation of the strengths, limitations and implications of ideas and secondly, identify the quality of the refinements made to the ideas as a consequence of the evaluation
- when matching characteristics in the student response to the synthesis descriptors, the evidence will be the proposed design concept, which is usually represented on the last page of the response. The objective states, 'synthesise ideas and HCD information to *propose* a HCD concept ...' *Propose* means to put forward a suggestion for consideration or action. It is important not to use evidence of the refinement of ideas in the convergent phase, as evidence of this criterion as the refinement has already been matched to the ISMG
- the syllabus glossary definitions are reviewed to develop consistent and accurate understanding of the qualifiers, cognitions and elements that describe the characteristics in the student work in the ISMG.

Internal assessment 2 (IA2)

Project (35%)

In Design, IA2 assesses Unit 3: Human-centred design (HCD) subject matter with a project that involves students documenting the application of a design process in response to a teacher-facilitated direct stimulus, e.g. guiding question, case study, stakeholder information, visual stimulus. Students identify a stakeholder and apply the HCD process in response to their needs and wants. The project includes documentation of the process and a spoken presentation for stakeholders. 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 practices

| Validity priority | Number of times priority was identified in decisions* |
|-------------------|---|
| Alignment | 71 |
| Authentication | 8 |
| Authenticity | 17 |
| Item construction | 7 |
| Scope and scale | 3 |

*Total number of submissions: 241. Each priority might contain up to four assessment practices.

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that featured:

- item construction using
 - stimulus material such as newspaper articles or links to TED talks about an issue related to Unit 3: Human-centred design subject matter
 - a guiding question that directed students to apply designing with empathy techniques when commencing the exploration phase
- clear instructions to students regarding how their work will be authenticated including checkpoints, teacher feedback and the drafting process for Parts A, B and C to clearly show that each part would only have one close-to-final draft submitted for feedback
- scaffolding that included an image of the syllabus design process to be used by students when completing their response.

Practices to strengthen

It is recommended that assessment instruments:

- describe a human-centred design context that directs students to commence an exploration of an issue associated with a particular group of people
- ensure students have the opportunity to demonstrate the full process of exploring that includes
 - students initiating an engagement with stakeholders to identify a need or want, analyse data and define a design problem. Examples of instruments where the teacher has undertaken aspect of the exploring and prescribed aspects of the problem, cannot be endorsed, e.g. specifying that all students are to redesign an outdoor space at the school to suit year seven students
 - directing students to stakeholder/s that are accessible for the collection of primary data and the evaluation of design ideas, e.g. people in their local community they can meet, interview and observe
 - avoid directing all students to a single organisation such as a local council or not for profit organisation as this reduces the opportunities for each student to explore a unique response, e.g. all students using the same interview data from a class visit by a local councillor may result in a duplication of design problems in student responses
- use the Unit 3 IA2 specifications to ensure the task aligns with the syllabus by using instructions copied directly from the syllabus. This ensures all students have the opportunity to demonstrate the characteristics assessed by the IA2 ISMG. The instructions to be included are
 - ‘Students identify a stakeholder and apply the HCD process in response to their needs and wants’
 - the complete list of requirements for Part A, B and C.

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 practices

| Accessibility priority | Number of times priority was identified in decisions* |
|------------------------|---|
| Transparency | 5 |
| Language | 0 |
| Layout | 1 |
| Bias avoidance | 0 |

*Total number of submissions: 241. Each priority might contain up to four assessment practices.

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that featured:

- a human-centred design context description, written using clear, succinct language and featuring accurate spelling, grammar and textual features
- communication that used syllabus terminology, avoided jargon, specialist and colloquial language.

Practices to strengthen

It is recommended that assessment instruments:

- maintain consistent formatting, layout and visual design across the instrument to minimise distractors
- avoid contexts that may inappropriately refer to a particular group of stakeholders or might disadvantage students due to factors such as gender, social or cultural background
- are checked using the print preview feature to ensure the layout of the document meets QCAA guidelines and that the instructions for Parts A, B and C are visible and legible.

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 final results

| Criterion number | Criterion name | Percentage agreement with provisional | Percentage less than provisional | Percentage greater than provisional |
|------------------|--------------------------------|---------------------------------------|----------------------------------|-------------------------------------|
| 1 | Exploring | 84.05 | 15.27 | 0.68 |
| 2 | Devising | 89.46 | 9.92 | 0.62 |
| 3 | Synthesising and evaluating | 84.13 | 15.4 | 0.46 |
| 4 | Representing and communicating | 86.88 | 12.33 | 0.79 |

Effective practices

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

- evidence matched characteristics of perceptive devising — in particular, identifying multiple ideas with credible and detailed attributes and the use of divergent thinking strategies
- matching evidence in student work to characteristics of the Representing and communicating criterion — in particular, identifying discerning decision-making and the fluent use of written conventions and features to present a design brief.

Sample of effective practices

The following is an excerpt from a response that illustrates the characteristics for the Devising criterion at the performance level indicated. The sample may provide evidence of more than one criterion. The characteristics highlighted may not be the only time the characteristics have occurred throughout the response.

Devising (6–7 marks)

This response provides evidence of multiple ideas perceptively devised from different points of view — with each idea incorporating unique, credible and detailed attributes — using divergent thinking strategies in response to a HCD problem in the develop phase.

PART A devised ideas and appraised into 4 clusters

PEER FEEDBACK

● = good design idea which could be used towards the final solution
● = idea has potential but should be developed further

stakeholder feedback on design ideas in 'alternative tap points' cluster

| Design Criteria | Completely Meets the Criteria | Partially Meets the Criteria | Does Not Meet the Criteria | When to Which the Idea Could be Ranked to Meet the Criteria |
|---|-------------------------------|------------------------------|----------------------------|--|
| 1. Provide the customer with easy access to a tap and off tap point | | | id | Consideration should be made to ensure that the tap is visible when they are waiting - including the use of signage and clear markings |
| 2. Provide a signpost to indicate the location of the tap and off tap point | | | id | Consideration should be made to ensure that the tap is visible when they are waiting - including the use of signage and clear markings |
| 3. Provide a signpost to indicate the location of the tap and off tap point | | | id | Consideration should be made to ensure that the tap is visible when they are waiting - including the use of signage and clear markings |
| 4. Provide a signpost to indicate the location of the tap and off tap point | | | id | Consideration should be made to ensure that the tap is visible when they are waiting - including the use of signage and clear markings |
| 5. Provide a signpost to indicate the location of the tap and off tap point | | | id | Consideration should be made to ensure that the tap is visible when they are waiting - including the use of signage and clear markings |
| 6. Provide a signpost to indicate the location of the tap and off tap point | | | id | Consideration should be made to ensure that the tap is visible when they are waiting - including the use of signage and clear markings |

Practices to strengthen

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

- when making judgments about the Exploring and Synthesising and evaluating criteria, the multiple characteristics within the two descriptors in the performance levels be identified separately. Many of the issues where marks were not supported in these criteria were due to marking practices that highlighted the complete performance level without considering the individual characteristics required, e.g. in Exploring, match the characteristics in the student work to the analysis descriptor, highlight the match and then proceed to matching the characteristics in the describing descriptor and complete the highlighting
- when making judgments about the 9–10 performance level in Exploring
 - for ‘insightful analysis of needs and wants ... to identify the significant features’, look for evidence that the student has demonstrated an understanding of the relationships between stakeholders’ aesthetic, cultural, economic, social and technical needs and wants informed by observation and deduction
 - for ‘discerning description of a problem and criteria’, recognise that the description is informed by the analysis that led to the defining of the design problem being described. Evidence of describing should be evident in the explore phase represented in Part A and also in the written design brief of Part B. The quality of the written conventions, features and language used in the description is assessed in Criterion 4. In Criterion 1 it is the substance of the description that is assessed, such as the thoughtful and astute choices to include particular characteristics and features
- when matching characteristics in responses to the synthesis descriptors in the Synthesising and evaluating criterion, the design proposal in Part C be looked at first for evidence of the proposed HCD concept. Where Part C does not include a proposed HCD concept, evidence in Part A may be used; however, this evidence typically would not match synthesis descriptors above the 3–4 performance-level descriptor, which requires proposing a partial HCD concept

- when looking for evidence of the evaluation of ideas against design criteria, the whole body of work in Part A be considered. When making judgments about the match to the evaluation descriptor above the 3–4 performance level, there should be evidence of visual changes to ideas that are supported by notes about the strengths and limitations of earlier ideas. As the design criteria are based on stakeholder/s' requirements, the most effective responses used designing with empathy techniques to engage with stakeholder/s in the evaluation
- when looking for evidence of the evaluation of the HCD concept against design criteria, consideration be given to the 2–3 minute spoken presentation (Part C). Typically, where judgments about the quality of the evaluation of the design concept were not supported, the spoken response was a recall of the design process undertaken rather than an evaluation of how well the final design concept satisfied the design criteria
- it be noted that to award the highest mark in a performance level, all characteristics must be demonstrated. In this instrument, there must be evidence of the use of low-fidelity prototyping together with ideation and schematic sketching across the 7–8, 5–6 and 3–4 performance levels in the representation descriptor. Responses that did not show evidence of the use of low-fidelity prototyping in Part A could not be awarded the highest mark in the performance level for the Representing and communicating criterion.

Internal assessment 3 (IA3)

Project (25%)

In Design, IA3 assesses Unit 4: Sustainable design subject matter with a project that involves students documenting the application of a design process in response to a teacher-facilitated direct stimulus, e.g. guiding question, case study, stakeholder information, visual stimulus. Students identify an opportunity and redesign a product, service or environment to improve its sustainability. The project includes documentation of the process and a visual presentation of the design concept. 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 practices

| Validity priority | Number of times priority was identified in decisions* |
|-------------------|---|
| Alignment | 93 |
| Authentication | 23 |
| Authenticity | 21 |
| Item construction | 16 |
| Scope and scale | 12 |

*Total number of submissions: 241. Each priority might contain up to four assessment practices.

Effective practices

Validity priorities were effectively demonstrated in assessment instruments that featured:

- a sustainable design context drawn from Unit 4: Sustainable design subject matter, e.g. designs that become obsolete due to function, quality or desirability
- stimulus material relevant to the task and specific to Unit 4: Sustainable design subject matter, e.g. a link to a TED talk about a sustainability issue of 'doing more with less'
- clear instructions to students regarding how their work will be authenticated, including checkpoints, teacher feedback and the drafting process for Parts A, B and C to clearly show that each part would only have one close-to-final draft submitted for feedback
- scaffolding that included an image of the syllabus design process to be used by students when completing their response.

Practices to strengthen

It is recommended that assessment instruments:

- use the Unit 4 IA3 specifications to ensure the task aligns with the syllabus requirements and Unit 4 subject matter (Syllabus section 5.5.1)

- provide clear instructions that do not restrict students’ application of the exploring and developing phases of the design process, e.g. use the syllabus instruction to ‘identify an opportunity and redesign a product, service or environment to improve its sustainability’
- include the detailed list of requirements for Part A, B and C in the task instructions to ensure all students have the opportunity to demonstrate the characteristics assessed by the IA3 ISMG.

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 practices

| Accessibility priority | Number of times priority was identified in decisions* |
|------------------------|---|
| Transparency | 3 |
| Language | 9 |
| Layout | 2 |
| Bias avoidance | 5 |

*Total number of submissions: 241. Each priority might contain up to four assessment practices.

Effective practices

Accessibility priorities were effectively demonstrated in assessment instruments that featured:

- a sustainability context description, written using clear, succinct language and featuring accurate spelling, grammar and textual features
- communication that used syllabus terminology, avoided jargon, specialist and colloquial language.

Practices to strengthen

It is recommended that assessment instruments:

- maintain consistent formatting, layout and visual design across the instrument to minimise distractors
- avoid contexts that might disadvantage students due to factors such as gender, social or cultural background.

Additional advice

To support Queensland schools, teachers and students to manage learning and assessment during the evolving COVID-19 pandemic in 2020, the Queensland Curriculum and Assessment Authority (QCAA) Board decided to remove one internal assessment for students completing Units 3 and 4 in General and Applied syllabuses. In General subjects, students completed two internal assessments and an external assessment. In Design, the IA3 assessment was eliminated in 2020 due to COVID-19, therefore there is no content in this section.

Assessment decisions

Due to COVID-19 pandemic adjustments, there were insufficient student responses to this instrument to provide useful analytics.

External assessment

Summative external assessment (EA): Examination — design challenge (25%)

Assessment design

Assessment specifications and conditions

Description

In Design, a design challenge involves students documenting a period of focused design work to meet a deadline. Students use the develop phase of the design process to respond to a provided design brief and stimulus that includes:

- a description of the features and sustainable requirements of a redesign problem
- design criteria that can be used to judge the quality of the design ideas
- visual and written stimulus to support the design brief.

The student response will include the following assessable evidence:

- ideas devised in response to a redesign problem
- evaluation of ideas against design criteria to make refinements
- synthesis of ideas and sustainable information to propose a sustainable design concept
- representation of ideas and a sustainable design concept using schematic and/or ideation sketching.

Conditions

- Time: two hours plus planning (15 minutes)
- Length: four A3 pages
- Equipment required: black ink pen, black felt-tip pen, 2B pencil, sharpener, eraser, ruler, a set of coloured pencils or pens, A3 tracing paper
- Stimulus: unseen.

The assessment instrument consisted of a single question derived from the context of Unit 4: Sustainable design.

This assessment was used to determine student achievement in the following assessment objectives:

1. represent ideas, and a sustainable design concept using schematic sketching and/or ideation sketching in the develop phase
2. devise ideas using divergent thinking strategies in response to a redesign problem in the develop phase

3. synthesise ideas and sustainability information to propose a sustainable design concept in the develop phase
4. evaluate the strengths, limitations and implications of ideas against design criteria and make refinements.

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

The assessment required students to use the develop phase of the design process see Figure 4 (Syllabus section 1.2.4). This involved a period of divergent thinking where a broad insight was sought, followed by a phase of convergent thinking where that insight was narrowed to a proposed design concept. Four pages were provided for the student response therefore allowing a response space of two pages for divergent thinking and two pages for convergent thinking.

Assessment decisions

Overall, students responded well to the following assessment aspects:

- applying the develop phase of the design process across the four pages of the response book in the time available
- making judgments about the strengths and limitations of proposed ideas against the design criteria
- proposing a design concept in response to the problem
- using visualisation skills of schematic sketching and ideation sketching to show their ideas and a design concept.

Effective practices

The following samples were selected to illustrate highly effective student responses in some of the assessment objectives of the syllabus.

Assessment objective: Devising

Effective student responses:

- used schematic sketches and ideation sketches to represent a wide range of redesign ideas
- showed preparedness to think divergently and flexibly about different possible ways to solve the problem
- devised ideas perceptively with credible and detailed attributes in response to the information on the stimulus sheet and the related Unit 4 subject matter. This included reference to stimulus information about the influence of decisions beyond the local level, consideration of stakeholder statements, recognition of the unsustainable linear life cycle of current baby products and the use of circular design methods
- recognised that the application of circular design methods was crucial to meeting two of the design criteria, and that the third criterion related to the launch of a successful design opportunity

- effectively planned their response and commenced sketching ideas on the first two pages of the response booklet
- used the design criteria as an organising strategy for the devising of ideas. This assisted the student to demonstrate flexibility of thought as they proposed different ways of solving the problem (ideas from more than one point of view).

There are no student response excerpts because either the student/s did not provide permission or there were third-party copyright issues in the response/s.

Assessment objective: Evaluating

Effective student responses:

- demonstrated discerning refinement of ideas based on judgments about the critical strengths, limitations and implications of attributes of ideas against all design criteria
- followed an initial phase of divergent thinking with a period of convergent thought, where the student used evaluation skills to seek insight into how their range of ideas could inform a final design concept
- used annotations to provide evidence of evaluating the ideas.

Student sample of effective responses

This sample has been included to show:

- evaluation of ideas evidenced by annotations
- discerning refinement of ideas, evidenced by changes to sketches with supporting annotations in the convergent phase
- a response that notes the significance of strengths and limitations of particular attributes of ideas in relation to the criteria
- a possible outcome if the attribute of an idea is used (implications), e.g. sponsorship by a known brand may encourage the recycling of toys.

Evaluating ideas and making refinements (6 marks)

This response shows discerning refinement of ideas based on judgments about the critical strengths, limitations and implications of attributes of ideas against all design criteria.

Excerpt from Page 2 of response

② RECYCLING VENDORS

Recycling vendors promote use of toys and will extend its life cycle **DC3**

Sponsored by Toys'r'us or some other known brand may help encourage the recycling of toys **DC3**

Recycled toys are distributed to other countries for other children in need of toys but cannot afford it **DC2 + DC1**

→ users can free up space in their house everytime they donate a toy.

Limitations
 → initial users may not be willing to give up toys that they hoard unless an award is given.
 → could be \$\$ to send out toys to other countries (considers shipping fees etc.)

Strengths:
 → Toys can be made into other objects (e.g. the materials are recyclable (e.g. plastics can be made into park benches))

IDEATION

Storage drawer to allow ease of storage

if w/s room id be placed avoid killing

Excerpt from Page 3 of response

② VENDING MACHINE NOW ALLOWS SWAPPING OF TOYS (MODIFIED + COMBINED FROM IDEATION ③)

CHOSEN TOYS TO SWAP OUT CAN BE PICKED FROM NUMBERS ON MACHINE, JUST LIKE ANY OTHER MACHINE

TOYS FROM INITIAL USER COLLECTED HERE TO BE SENT AWAY OR REUSED BY ANOTHER USER **DC2 + DC3**

STRENGTH
 → CAN BE PLACED ANYWHERE **DC2 + DC3**

LIMITATIONS
 → STILL HEAVY AND CANNOT BE TRANSPORTED AROUND MUCH

TOYS THAT USERS CHOSE TO REUSE COME OUT HERE **DC2 + DC3**

Excerpt from Page 4 of response

Numbers correspond to the toy type

Toys are neatly assorted for an aesthetic display and allows ease of selection of toys **DC3**

Wheels have been added to make the machine mobile and easily accessible to anyone and everyone **DC3**

Assessment objective: Synthesising

Effective student responses:

- demonstrated an innovative design concept with unique attributes related to transformation and modification of existing baby products and their use
- satisfied all the design criteria by
 - extending the number of users of a baby product beyond the initial user
 - including alternative uses for a baby product to extend its life cycle
 - encouraging participation by stakeholder/s in extending the life cycle of baby products
- integrated stimulus information related to obsolete baby products, attributes of the baby products and stakeholder statements
- made a decision about a final design concept that best met the design criteria by drawing on their evaluation and refinements of ideas in the convergent phase
- proposed their design concept on the final page, using a sketch with labels that showed a logical and harmonious integration of attributes of multiple ideas and stimulus information.

There are no student response excerpts because either the student/s did not provide permission or there were third-party copyright issues in the response/s.

Assessment objective: Representing

Effective student responses:

- used sophisticated visualisation skills of schematic sketching and ideation sketching to comprehend ideas
- used elements and principles of visual communication to differentiate between critical and non-critical attributes of the student's ideas and design concept
- used sequences of related sketches to easily and readily show their progression of understanding of ideas
- demonstrated evidence of representing throughout the response.

Student sample of effective responses

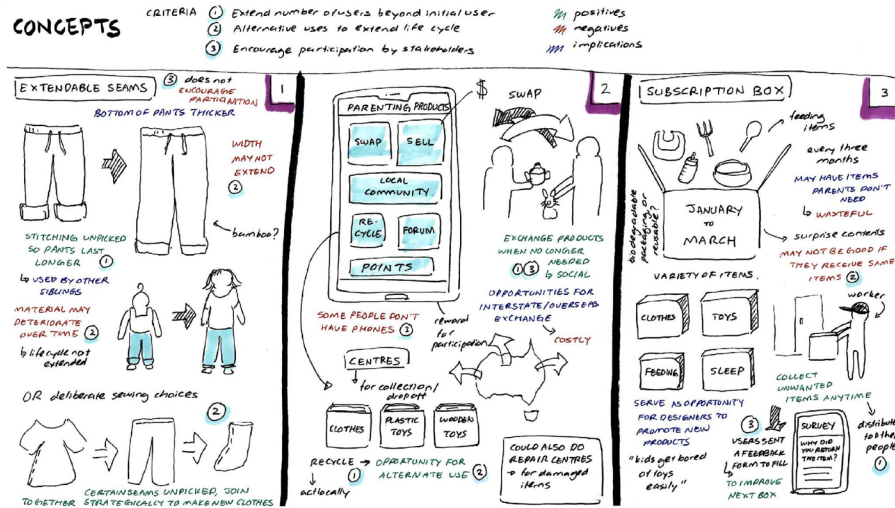
This sample has been included to show intellectual complexity in the use of visualisation skills to think through design ideas. This includes the use of:

- combinations and sequences of ideation and schematic sketches
- arrows, boxes, circles and connecting lines that represent relationships between information, attributes of ideas and different ideas
- elements and principles of visual communication including line, tone, colour, shape, contrast, proximity and hierarchy
- labels that add value beyond the visual information.

Representing ideas and a design concept (6 marks)

This response indicates sophisticated use of:

- elements and principles of visual communication to differentiate between critical and non-critical attributes in ideation and schematic sketching of ideas and a design concept
- sequences of related sketches to easily and readily show the progression of understanding of ideas (high level).



Practices to strengthen

It is recommended that when preparing students for external assessment, teachers consider:

- instructing students to take particular note of what needs to be redesigned. Some responses focused on improving a baby product without relevance to the requirement to extend its useful life cycle. Students who did not answer the question were unable to achieve the best result because of lack of relevance to the task
- how the question directs students to apply the design process. Responses where the first page was a written exploration of the problem with extensive notes listing syllabus subject matter, transcribed stimulus information and thoughts about possible solutions were less effective. This approach limited the time and space available to devise a wide range of ideas in the divergent thinking phase using ideation and schematic sketching
- the instructions to evaluate ideas and make refinements as per the syllabus assessment objectives for the external assessment. Many students provided limited evidence of refinements based on the evaluation of ideas and wasted significant time and effort evaluating the final design concept. In this assessment, the design concept is proposed as the student's best solution to the problem as an outcome of a period of evaluation and refinement in the convergent thinking phase
- how to understand and use the stimulus when devising ideas. A successful response required the ability to understand the relationship between the problem statement, design criteria, visual and written contextual information and Unit 4 subject matter, e.g. understanding that demonstrating circular design in the response was a crucial component
- how to devise ideas using schematic and ideation sketching that are detailed and credible. Students' understanding of the question and stimulus information should be integrated into the representations rather than appear as written notes accompanied by a thumbnail sketch.