GCSE EXAMINERS' REPORTS

DESIGN AND TECHNOLOGY
GCSE

SUMMER 2022

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DESIGN AND TECHNOLOGY

GCSE

Summer 2022

COMPONENT 1: D&T IN THE 21ST CENTURY

General Comments

Over 9,200 candidates sat this GCSE Eduqas Design and Technology paper - 99% of candidates did attempt all questions and it was pleasing to see all selected and answered just one Question 6. Almost 60% of candidates selected in-depth questions on natural and manufactured timbers. Few chose ferrous and non-ferrous metals and thermosetting and thermoforming plastics. On average, marks awarded were consistent across almost all material areas.

Candidates now have a sound knowledge of sustainability issues associated with product design and these were the questions most easily accessed on the paper. The mathematic questions continue to be answered well by the candidates though, we do encourage centres to ensure all calculation workings are shown so as not to disadvantage those who make errors when calculating final answers.

Weaknesses continue to lie with knowledge of materials and their associated working properties. Candidates found it difficult to name correctly a modern composite material and could not name a specific thermoforming plastic suited to a detergent bottle. Textile material knowledge was highlighted as a weakness too, few could select correctly the terms associated with a woven fabric construction nor could they discuss confidently the differences/similarities between the properties of silk and polyester.

It was found candidates are now reading the stem of the question and have become more familiar with the structure of the paper. The images of products provided are helping candidates access questions and they are now attempting the questions even if unsure of the answers, and to good effect.

Practice of banded and higher tariff questions is still encouraged. Few candidates are able to attain full marks for such questions as they fail to provide balanced and/or justified answers.

Comments on individual questions/sections

Q.1 Design and Technology and our world

A positive start to the paper - the majority of candidates performed very well with an almost 100% completion attempt.

(a) The mathematics questions were answered very well by nearly all candidates. It was good to see candidates reading the question to analyse the data given. Most candidates showed calculation workings, which is always encouraged.
The majority of candidates gave a simplistic definition of ‘carbon footprint’. Some candidates need to offer more detail in their responses and be aware this is required for questions needing any explanation.

(b) Almost all candidates recognised the Fairtrade logo and could relate its importance to ethical production. Candidates do need to extend their written answers to ensure they are not simply listing benefits without an explanation. This limited the number of candidates who attained the 3 marks available for this question. The Carbon Footprint logo was recognised by many candidates, but few knew it verifies the product is manufactured or transported in a way that reduces CO^2 emissions – many stated incorrectly, the product emits high levels of CO^2 or has a high carbon footprint.

Q.2 Mechanical devices

A material area candidates in the past have found more challenging. The images provided helped candidates with logical thinking, so it was pleasing to see a 99% attempt with this question.

(a) Candidates worked out from the image of the Automata Toy the function of a Cam. Not all could correctly label the Follower or the Cam from the image provided in 2(a)(ii). However, most candidates did at least attempt this question.

(b) Candidates were less familiar with a pear-shaped Cam. Centres are encouraged to unpack the Specification to ensure the amplification is covered in Schemes of Learning.

(c) Many could identify by labelling correctly, the effort and load on the lever system image.

(d) Analysis questions are the more tricker on this paper requiring candidates to justify answer provided. Benefits of crushing and recycling aluminium cans were clearly identified. Relating benefit(s) to the environment, justifying answers provided, need some further practice to ensure full marks can be gained.

Q.3 Smart, composite and technical materials

Success with the mathematics question helped candidates attain well – this was the second most successful question answered on the paper.

(a) Very few candidates knew that carbon fibre was the most appropriate answer to this first question. Many gave a material that was a composite but one that wasn't deemed a modern material which was the focus for this question. Highlighting to candidates the stem of the question needs to be read carefully. Although question 3(a)(i) was answered incorrectly, candidates were not penalised when describing properties of the composite material in 3(a)(ii). If the properties stated related to the composite material provided, marks were awarded. The descriptions provided however, were weak; candidates frequently listed properties rather than describing them in relation to the tent poles.

(b) Generally, the mathematic question on surface area of the tent was well calculated. Workings were clearly presented. Where problems were seen, candidates calculated the area of the tent, emphasising the importance of reading the question carefully.

(c) It was felt candidates guessed the answers to the question on microfibres, with some success. Few gained the full two marks. Microfibres form part of the specification amplification, Tactel and Tencel are the two most common microfibres used to manufacture textile products.

(d) Question 3(c) was challenging for a number of candidates; however, most attempted this question identifying successfully the circuit symbols for the light switch and battery. Few knew the symbol for LED.

Q.4 Materials

This question was the least successfully answered in the paper. Candidates continue to be unfamiliar with the properties of a range of common materials used in product design. Attempts to answer questions was good, however, the lack of knowledge prevented success with command words, explain and discuss, which require in-depth understanding. Knowledge of textile materials was notably poor.

(a) This starter question was challenging for some candidates. A number identified the properties of the manufactured boards rather than describing the structure of each. These manufactured boards are commonly used in a school environment and drawing candidates' attention to how they are manufactured would be of benefit.

(b) Few candidates could name a suitable thermoforming plastic suitable for the manufacture of detergent bottles. It was clear candidates knew the difference between a thermoforming and a thermosetting plastic and could explain quite well why a thermoforming plastic is most suited to detergent bottle use. Sharing a range of common plastic products and discussing the most suited material for each would ensure candidates could attempt these types of commonly written questions.

(c) Knowledge of textile materials and their structure continues to be a candidate weakness. It is recommended the Textiles content and amplification of the specification becomes embedded into centres teaching.

This question was attempted by inserting the words provided but unfortunately not many candidates selected the correct terms. Few recognised the two yarns needed to construct a woven fabric are warp and weft. Getting candidates to unravel a woven fabric sample, like hessian, would help them understand how a woven fabric is constructed. The image of silk/polyester ties helped candidates attempt question 4(c)(ii) with some success but it did become clear, answers provided were conjectured rather than confidently known. Textiles is a key material in product design and will have an equal weighting in questions posed in the core of the exam paper.

(d) Many candidates knew the size of A3 paper, but this question did catch some candidates out, who guessed incorrectly the answer. The most common disadvantage given, of using recycled paper, related to a reduction of the paper's strength. Few gained full marks as descriptions provided lacked the depth needed. Practicing questions that require candidates to discuss both the disadvantages as well as the advantages of various materials would be good practice and helps candidates identify specific properties of these materials too.

Q.5 Generic Questions: CAD/CAM

All candidates identified one Cam device they could discuss as part of Question 5. The most common option was the laser cutter.

(a) Nearly all candidates could state the meaning of CAM. They could also identify the benefits of using Cam devices, but few related their answer to the school environment as specified in the question.

(b) Almost all candidates were able to identify a CAD software package. Answers to 5(b)(ii) commonly described the disadvantages of CAM and not CAD. Those candidates that did discuss the disadvantages of CAD did not always relate their answer to a school environment and therefore failed to attain full marks for this question. Encouraging candidates to plan the answer to these question types may help ensure they read the question careful and keep their thinking focused and on track.

(c) Most candidates could identify a hazard though a clear explanation hindered some to gain full marks. Few candidates referred to the disadvantages of developing a design when using CAM. They did reference advantages but struggled to evaluate in relation to design development. Encouraging candidates to give examples within evaluative questions and plan their answer in advance, may help them gain full marks in these high tariff questions.

(d) A pleasing set of correct maths calculations showing candidates are being taught well functional maths style questions. Workings were shown though not all candidates rounded their answer to two decimal places as specified in the question.

Q.6 In-depth Knowledge

All candidates were able to follow the instructions about selecting and answering just one material area. The most popular material selected, by far, was natural and manufactured timber; few chose ferrous and non-ferrous metals and thermosetting and thermoforming plastics. On average, marks awarded were consistent across almost all material areas. The weakest answered material was Papers and boards. Generally, candidates accessed the questions well. The drawing and labelling of a bar chart brought much success and questions (c) and (d) were attempted quite well. The most able candidates demonstrated their understanding of how to answer questions that needed to be analysed and evaluated.

Q.6 Electronic Systems, Programmable Components and Mechanical Devices

(a) Most candidates identified the switch as a component to turn the mood light on. Significantly, few candidates provided an LDR as the answer. In addition, very few candidates understood the purpose of a PIC chip in the mood light. The candidate responses were broad and showed a lack of knowledge and understanding of programmable components and their role in a circuit. A good number of candidates, however, could give at least one reason why a double-sided circuit board was used in the design of the circuit board. It is good to note that most of the candidates had some experience populating a circuit board and could describe some processes of soldering an LED to a circuit board.

(b) Candidates could clearly analyse data from a table and draw accurately a bar chart. Many did fail to label the axis so communicating this as a requirement is recommended. Calculating VAT caused few problems.

(c) Most of the candidates coherently analysed the impact of recycling electronic components. Mostly, candidates used their general knowledge of sustainability when answering the question so very few analysed the complex processes involved in recycling e-waste and the impact this has on the environment.

(d) This question was poorly answered with most candidates only demonstrating partial knowledge and understanding of the benefits to the designer and manufacturer of prototyping a mood light. The candidates did not draw on their knowledge and experience of designing circuit diagrams and running test simulations using CAD packages or using materials such as corrugated cardboard or HIPS to manufacture and test the shape of the mood light housing. The candidates made limited reference to the mood light when writing their evaluation.

Q.6 Papers and Boards

(a) Most candidates referred to the thickness of the card as a reason for using 180 gsm card for the greeting cards. Few referred to rigidity or weight. Surprisingly, very few candidates could state the function of a duplex printer. In addition, many candidates did not understand the purpose of registration marks and failed to explain the reason they are used when manufacturing greetings cards. Most candidates recognised the image provided was of a guillotine (accepted), few identified it as a rotary trimmer. Describing the process of die cutting greeting cards was a challenge for many candidates. It became clear that they did not understand the process of die cutting and therefore were not able to apply to greetings card manufacture.

(b) Candidates could clearly analyse data from a table and draw accurately a bar chart. Many did fail to label the axis so communicating this as a requirement is recommended. Calculating VAT caused few problems.

(c) Most candidates coherently analysed the impact of harvesting wood and wood pulp on our ecological footprint. Mostly, candidates used their general knowledge of sustainability when answering the question but did include some useful examples to support their responses. Commonly, reference was made to deforestation and CO^2 emissions. Less able responses failed to expand on their initial points to form a detailed, coherent discussion.

(d) Candidates could reflect on their own experiences of model making in the classroom when responding to this question. Most responses focused on testing to improve final product, saving material wastage/time/cost. More reference was made to the designer rather than the manufacturer, reducing the marks that could be awarded. Sound responses made judgements and evidenced the candidate's ability to evaluate, highlighting both advantages and disadvantages.

Q.6 Timber and Manufactured Boards

(a) Most candidates referred to dowels when stating the name of the component used to join the wheels to the toy, and most stated a pillar drill as the machine that was used to create the toy's eye. No marks were awarded for just stating 'drill' as some candidates gave as their answer. Candidates have knowledge of timber finishes and could explain well why they would be applied to the child's toy. Few candidates knew the image given was of a disc sander in Q6(a)(iv). Answers provided to describe how the toy could have been constructed using a rectangular timber block were sound; good use of technical terminology and identification of suitable equipment was seen in answers provided.

(b) Candidates could clearly analyse data from a table and draw accurately a bar chart. Many did fail to label the axis so communicating this as a requirement is recommended. Calculating VAT caused few problems.

(c) Most candidates coherently analysed the impact deforestation and converting natural timbers has on our ecological footprint. Mostly, candidates used their general knowledge of sustainability when answering the question but did include some useful examples to support their responses. Commonly, reference was made to CO^2 emissions both in processing and transportation of timbers as well as the impact upon eco-systems. Less able responses failed to expand on their initial points to form a detailed, coherent discussion.

(d) Candidates could reflect on their own experiences of model making in the classroom when responding to this question. Most responses focused on testing to improve final product, saving material wastage/time/cost. More reference was made to the designer rather than the manufacturer, reducing the marks that could be awarded. Sound responses made judgements and evidenced the candidate's ability to evaluate, highlighting both advantages and disadvantages.

Q.6 Metals: Ferrous and Non-Ferrous Metals

(a) Most candidates referred to bolts when stating the name of the component used to attach the wheels to the toy, and some stated a pillar drill as the machine that was used to create the axle holes. No marks were awarded for just stating 'drill' as some candidates gave as their answer. Candidates have knowledge of suitable finishes but struggled to explain well why they would be applied to the child's toy being awarded one mark from the two available. Few candidates knew the image given was of a buffing or polishing wheel in Q6(a)(iv). Describing the process of how to manufacture the wheels of the toy was a challenge for many candidates. Few mentioned the use of a lathe which restricted the detail that could be provided and marks that could be awarded. Practicing step-by-step instruction of constructional processes will help candidates in future examination papers.

(b) Candidates could clearly analyse data from a table and draw accurately a bar chart. Many did fail to label the axis so communicating this as a requirement is recommended. Calculating VAT caused few problems.

(c) There was some coherence to candidates' analysis of the impact mining aluminium has on our ecological footprint. Examples provided tended to focus just on the energy needed to extract aluminium and the consequences of CO^2 emissions. There was some evidence candidates did reflect upon the advantages to extracting aluminium as a material that is easily reused for alternative products. Less able responses failed to expand on their initial points to form a detailed, coherent discussion.

(d) Candidates could reflect on their own experiences of model making in the classroom when responding to this question. Most responses focused on testing to improve final product, saving material wastage/time/cost. More reference was made to the designer rather than the manufacturer, reducing the marks that could be awarded. Sound responses made judgements and evidenced the candidate's ability to evaluate, highlighting both advantages and disadvantages.

Q.6 Thermoforming and Thermosetting Polymers

(a) Most candidates referred to screws and bolts when stating the fixture that was used to assemble the public bench. Few referred to a self-tapping or machine screw but were not penalised, but it would be useful to encourage candidates to use technical terms within the in-depth sections of the paper. Many candidates could identify a product that could have been recycled to make the public bench, the most common answer was a wheelie bin. Some candidates chose products that would not be made from HDPE, so failed to gain a mark. Most candidates were able to correctly apply the properties HDPE to the reasons why it would be used for a public bench, and most could state the machine used to create the holes in the public bench was a pillar drill. Answers provided to describe how the legs were joined to the public bench lacked confident knowledge. Practicing step-by-step instruction of constructional processes will help candidates in future examination papers.

(b) Candidates could clearly analyse data from a table and draw accurately a bar chart. Many did fail to label the axis so communicating this as a requirement is recommended. Calculating VAT caused few problems.

(c) Most candidates coherently analysed the impact recycled plastics have on our ecological footprint. Most candidates referenced the positive aspects of recycling plastics and used their general knowledge of sustainability when answering the question. They included some useful examples to support their responses. Less able responses failed to expand on their initial points to form a detailed, coherent discussion. Practicing analytical style questions may help candidates access these high tariff questions more easily, ensuring Band 3 attainment.

(d) Candidates could reflect on their own experiences of model making in the classroom when responding to this question. Most responses focused on testing to improve final product, saving material wastage/time/cost. More reference was made to the designer rather than the manufacturer, reducing the marks that could be awarded. Sound responses made judgements and evidenced the candidate's ability to evaluate, highlighting both advantages and disadvantages.

Q.6 Fibres and Textiles

(a) All candidates understood the term component and identified a zip was the fastening for the skirt. Many identified correctly an invisible zip was used. Darts are a constructional technique used to shape clothing and most candidates stated this with clarity. Not all candidates knew the purpose of interfacing as a means to give fabric support and structure, but all attempted this question often gaining a mark; few explained the purpose. Most recognised an overlocker as a piece of equipment, but few candidates could describe how to edge finish a plain seam with bias binding. It was felt candidates did not understand what bias binding was and therefore they struggled to explain how it is attached as an edge finish. Some candidates gained marks by describing how to make a plain seam.

(b) Candidates could clearly analyse data from a table and draw accurately a bar chart. Many did fail to label the axis so communicating this as a requirement is recommended. Calculating VAT caused few problems.

(c) Most candidates had some coherency in their writing when analysing the impact of farming wool and silk on our ecological footprint. Commonly, reference was made to the negativity of farming these fibres rather than the positivity of farming materials that are naturally sourced. Most answers referred to transportation of raw materials and the effect this has on our carbon footprint. Less able responses failed to expand on their initial points to form a detailed, coherent discussion.

(d) Candidates could reflect on their own experiences of model making in the classroom when responding to this question. Most responses focused on testing to improve final product, saving material wastage/time/cost. More reference was made to the designer rather than the manufacturer, reducing the marks that could be awarded. Sound responses made judgements and evidenced the candidate's ability to evaluate, highlighting both advantages and disadvantages.

Summary of key points

The main areas candidates could improve attainment:

- Becoming familiar with the specification and in particular the amplification of content homing in on key words and processes.
- Discussing the materials household products are made from (including modern materials), their properties, and why these materials are best suited (or perhaps not) to the product.
- Ensure textile fibre properties and fabric construction is included in lessons that prepare for exam success.
- Practice describing manufacturing processes, identifying equipment needed for each stage (Question 6).
- Practice answering questions that can reflect on both positives and negatives, advantages, and disadvantages. This will help attain band 3 of the in-depth higher tariff questions.

I hope the feedback provided above will help centres to prepare for the 2023 examination season.

DESIGN AND TECHNOLOGY

GCSE

Summer 2022

COMPONENT 2: NEA

General Comments

This current academic year sees only the second full award of the GCSE Design and Technology qualification. This year was the first time since 2019 that external moderation through centre visits has taken place and appears to have been well received by Centres. It was a pleasure to see the creative and innovative work of this year's cohort on display. The number of centres entering candidates for this GCSE Design and Technology qualification continues to grow with a hundred new centres in 2022 that have not previously examined through Eduqas.

For this year only, adaptations were in place to support candidates who have undoubtedly experienced a difficult and challenging time in the two-year period leading up to their GCSEs. Adaptations included the acceptance of a mock-up and/or clear\detailed intentions of prototypes to address the 'manufacturing a prototype section' of the NEA criteria and demonstrations of using machinery/tools/processes. It is incumbent on all teachers to ensure they follow the correct specification when delivering WJEC/Eduqas qualifications. Teachers in England should ensure they look to the Eduqas brand for information relating to the delivery of this GCSE Design and Technology qualification. A minority of centres followed the adaptations set out for centres in Wales which were not entirely appropriate for centres in England.

The interpretation of the adaptations varied considerably from centre to centre, within centres and across the country. The process of applying the existing assessment criteria to the adaptations was challenging but the vast majority of centres coped well.

Whist most centres took the adaptations on board and guided candidates to produce mock-ups/models or details of their design intentions, it was really pleasing to see that many candidates had produced fully functioning prototypes as if no disruption had taken place at all.

This specification requires candidates to present a 'personal design journey' showing the iterative development of a fully functioning prototype that fully meets the needs, wants and values of the users. The emphasis should be on a 'think – test – evaluate - rethink' cyclic process where possible design ideas are tested, developed and refined against a clearly defined design specification. In some centres this process appeared underdeveloped this year, making it difficult to see where the finished prototype, mock-up or design intention had evolved from. This is understandable given the recent disruption and restricted access to workshops in recent months.

Comments on individual questions/sections

(a) Identifying and investigating design possibilities – 10 marks

Candidates should have access to all three of the contextual challenges. Candidates may decide to analyse all three, two or just one but the critical point is that they need to identify a range of opportunities for the development of ideas which leads on to the identification of a broad range of problems, but it is their choice. Candidates may find analysing more than one easier in order to fulfil the requirements. It is not acceptable for centres to direct all candidates to the same contextual challenge as appears to be the case in a minority of centres.

The identification of users was underdeveloped in many centres. User needs and wants runs through all assessment strands and should be a key consideration throughout the iterative process. There appeared to be an increase in superficial questionnaires and pie charts that rarely support the development of ideas whereas an interview with the intended user could be far more beneficial. A 'user centred' approach to design is required.

Centres are advised to guide candidates in apportioning their time according to the marks available. Research and investigation were often wide ranging and extensive but did not necessarily support candidates through the iterative process. Tables listing materials and components does not reflect an iterative process, materials and components are best discussed alongside testing and modelling. A leaner more focussed approach is recommended.

This area was generally assessed fairly and consistently in centres, although the relevance and quality of the work produced should reflect the mark awarded, not the quantity. Where candidates have only focussed on one problem a mark in a lower band is a better fit.

(b) Developing a design brief and specification – 10 marks

Candidates are required to consider a range of problems and outline a number of design briefs before focussing on one final brief. The final design brief should be arrived at following careful analysis of realistic research, their understanding of the problem and the task ahead which is crucial to the eventual success of the product. Design briefs were generally underdeveloped or simply a repeat of an earlier possible brief. A minority of candidates had preconceived ideas of what they wanted to make. This in effect narrows down their opportunities and the marks they could potentially have access to.

Design specifications are also an area for further development and refinement. Specifications appeared to have taken a step backwards from the progress made pre pandemic. Criteria should be arrived at following the careful analysis of research and early testing and modelling of ideas. This was not the case in many centres where candidates produced a generic list of attributes – a wish list with little or no reference to the research and investigation. It should be clear from the analysis of research where each of the criteria has been derived from. In some specifications dimensions and cost '*appeared'* in the specification with no reference to how these numeric values had been arrived at.

Dimensions should realistically reflect the end use or placement of the product and if cost is included then it should be used as a driving force throughout the iterative process.

There is no set format for a design specification but should include SMART criteria including subject specific terminology such as function, aesthetics, size, etc. Some candidates also use dedicated headings such as 'user needs' and 'user wants' as well as 'essential' and 'desirable' which helps differentiate between what is of primary importance and what is not. A robust specification should also indicate how the end product will be tested to measure its success or otherwise.

The design specification is an effective design tool used to drive design thinking and to evaluate ideas as they evolve. Not many candidates use the specification in this way therefore cannot access marks in the high mark range.

This area was generally fairly assessed in most centres however some superficial and underdeveloped specifications were awarded high mark whereas a mark in a lower band would have been more appropriate.

(c) Generating and developing design possibilities – 30 marks

Initial ideas, low fidelity modelling, card or paper for example, and testing of early concepts is to be encouraged alongside the exploration and identification of possible design opportunities. This enables candidates to quickly identify the strengths and weakness in their initial ideas allowing for a better understanding of the task ahead. This approach also helps candidates identify where more relevant targeted investigation is needed or where ideas need further development or indeed rejection. The iterative process is cyclic whereby research and investigation sit alongside the development of ideas one part informing the other. As ideas develop higher fidelity modelling such as CAD should be introduced to refine and further develop ideas. Candidates in centres that had encouraged and facilitated this approach generally produced more realistic outcomes that met the needs and wants of users. In other centres this is an area for further consideration. Please note that design proposals or intentions should be realistic and achievable. This was not the case in a few centres which left some candidates facing problems that were difficult to overcome.

Candidates should be encouraged to record every aspect of their design journey as they progress through the iterative process and to provide evidence of analysis and evaluation of their ideas, test pieces and models as they progress towards the final solution. The concept of 'think – test – evaluate - re-think' needs to be reinforced in some centres where very little evidence modelling took place regardless of approach taken. This area was less well developed than we have seen previously - understandable given the challenges candidates and centres have experienced in the past two years along with restricted access to workshops which may also have impeded some candidates' ability to produce physical models of their ideas. Please note that modelling can be in any material and takes many different forms, this includes pencil sketches and CAD drawings.

Technical details that relate to materials, dimensions, finishes and production techniques should also be considered alongside the development of ideas. This could be developed further in most centres.

The application of the assessment criteria in this section was often found to be generous. High marks were often awarded when the assessment descriptors in the band below would have been more appropriate. High marks were often awarded for design intentions that lacked sufficient detail to fully justify the mark awarded.

(d) Manufacturing a prototype – 30 marks

Candidates are required to present a logical sequence and achievable timeline for the stages of production of their product. There was some confusion where the sequence referred to the mock-up or design intention, not the final proposal - understandable given the circumstances. Candidates who have more experience of modelling their ideas beforehand are better placed to present a comprehensive sequence and timeline which supports manufacture. Note that a pictorial diary of how the product is made is not required.

Outcomes varied depending on the approach taken by centres, but most candidates presented a mock-up of their product or a fully functioning prototype product. As well as traditional skills, candidates are increasingly using modern manufacturing techniques such as laser cutting and 3D printing in the manufacture of their prototype products.
There was an assumption that the quality of outcomes would be somewhat inferior to what has previously been presented at GCSE and for some, this was true but not for all. A small number of outcomes were presented in a partial or incomplete state. More worryingly, some candidates had been supported by non-specialist staff which can be very limiting for candidates.

This assessment in this area was often generously applied; high marks had been awarded where the assessment descriptor in at least the band below was a more appropriate fit, regardless of whether candidates had produced a fully functioning prototype, mock-up or design intention.

(e) Analysing and evaluating design decisions and prototypes – 20 marks

Under the WJEC brand, this assessment strand was removed as part of a discreet set of adaptations for centres delivering this qualification in Wales only. Some centres in England delivering the equivalent Eduqas qualification had mistakenly followed the Wales adaptations and not included this strand in their assessment. Arrangements were put in place to ensure no candidates were disadvantaged.

Most candidates had included some reflective commentary as an on-going process throughout their iterative journey. Moving forward, some might find full engagement with a ‘real’ client more beneficial as potential issues could be highlighted and resolved earlier on in the process.

The quality of summative evaluations varied but many were quite well written in the form of a critical appraisal, with the design brief, specification, views of users and reference to end testing fully considered. More robust specification criteria would better support candidates in this aspect, particularly with reference to measurable criteria. End testing, through user trials is essential in gauging the success or otherwise of a product. This should be evidence based so photographic images of testing in situ are recommended.

Some candidates struggled with this section this year particularly when there was no physical model or prototype to evaluate. A few candidates who presented design intentions as a paper-based exercise did seek the views of users and were able to identify at least some strengths and weaknesses in their ideas and offer some modifications and improvements. Testing in situ also proved problematic for some this year. Although most candidates identified further areas for developing and improving their product in order to meet the needs, wants and values of the intended user, this remains an area for further development. For many others however the evaluations were hypothetical and not based in reality.

Centre are advised to apportion time accordingly to this section of the assessment criteria particularly as up to 20 marks are potentially available here. Superficial evaluations that briefly referenced the specification were often awarded high marks whereas a mark in at least the band below would have been more appropriate.

Centre Adjustments:

Following moderation, there was a positive outcome for the majority of centres who had their marks accepted as accurate and no adjustments were made. Approximately 12% of centres will have had a negative adjustment applied to their marks; candidate marks will be reduced accordingly. A minority of centres had a positive adjustment applied to their original marks where candidates had been under rewarded for the work they had produced. This process brings all candidates into line with the national standard.

Centre reports provide feedback on the sample presented at moderation and will outline the accuracy of assessment in respective centres. Centres are advised to carefully consider any issues outlined in the report as they prepare for the assessment in 2023.

Summary of key points

- This is a 35-hour design and make task which commences on June 1st annually with the publication of three different contextual challenges.
- Some centres provide a structured format or template for their candidates. This should be avoided as it will limit the mark awarded to the candidate.
- The format of the NEA submission is flexible and can be presented in a format that best suits the candidate.
- e-portfolios are an acceptable format for the NEA, but centres should note that all test pieces, models and the product must be available for moderation. It is also worth considering whether scanning sketchbook work into an e-portfolio is worth the extra time and effort when it is just as easy to present the sketchbook as part of the submission.
- Access to e-portfolios for moderators is essential. Consideration should also be given to the possible arrival of a team leader and principal moderator.
- Candidates should have access to all 3 contextual challenges.
- Proportionate time needs to be spent on each strand of the assessment criteria according to the marks available. Some candidates spend far too much time on research and investigation then struggle to complete the final stages of their NEA.
- There is a lack of internal standardisation in some centres. Teacher are required to set an agreed standard for all candidates in the centre regardless of material specialisms.
- Accurate and consistent application of the marking criteria is critical to ensure all candidates receive fair and equal reward for the work they produce.
- It is incumbent on centres to pay close attention to any guidance issued by the examination board (Eduqas) should anything else nationally disrupt education in future.
- Feedback from the 2022 NEA will be discussed in forthcoming CPD sessions planned for the autumn 2022.
- Centres in England should look for guidance and information regarding the delivery of this specification on the appropriate website - https://www.eduqas.co.uk

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