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Principal Moderator's Report

Summer 2016

Pearson Edexcel GCE in Design & Technology: Food Technology (6FT04)

Unit 4: Commercial Design

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General Observations
Most centres have continued to make steady progress with the specification and the coursework is well organised in A3 portfolios or sent as electronic submissions. Clarity, technical detail and justification are prerequisites for A2 GCE Food Technology with application of food science and nutrition.

Candidates are required to adopt a commercial design approach to their work, reflecting how a professional designer might deal with a design proposal and its resolution when working for a client/user group. This means that consultation between designer and client should take place at key points in the design/make process. Where this designer-client relationship was well developed, the whole design, develop and make, test and evaluate process was enhanced and justified. A client/user group must be integral within the coursework to allow focus and feedback throughout the coursework. Unfortunately for many candidates, it was seen only as a necessity for meeting the requirements of the assessment criteria, and remained a passive activity with little purpose or function.

A wide range of commercial design work was presented on a variety of topics including the Rio Olympics, the leisure industry, festival and street food, farm shops and cafes, deli food boxes, pop-up restaurants, menu kits/boxes, celebration food and luxury food products for a specific event or point of sale. Coursework food products have remained inventive as a wide range of cultural cuisines from around the world continue to be used as inspiration for commercial design projects, as well as TV cooking programmes using many innovative cooking techniques which are being delivered in the food technology class kitchens in schools. Moroccan, Asian and Italian themed food products remain popular, as do health related sports food.

All centres submitted work that was potentially suitable for course requirements, with a range of levels of outcome.

Administration
As a guide, the A2 Commercial Design project should not exceed 30 pages of A3 paper. Practical work must be technical, creative, challenging and demanding, showing accuracy and precision. It would benefit centres to consider the number of components within a food product when considering the challenge and demand of a product. At A2, a wide range of different components should be presented within a food product. The use of finishing techniques for the final presentation of food products is a prerequisite for high-level making marks. The photographs in the CAB are the starting point of the moderation process for each candidate. Most centres have a good understanding of the assessment criteria.

The moderating team reported that the overall presentation, layout, organisation and quality of the written A2 portfolios was of a high standard, and it is clear that

centres are putting considerable time and effort into their teaching to produce some outstanding work.

Several centres produced some truly spectacular practical work, and of the highest standard seen at A2 level. Annotation in the CABs remains very helpful for moderation. The quality of photographic evidence of the finished product(s) continues to be variable.

Section A: Research and analysis

Candidates are required to adopt a commercial design approach to their work, reflecting how a professional designer might deal with a design proposal and its resolution when working for a client/user group. Domestic situations (dinner parties, birthday celebrations, engagements/weddings) do not give rise to a commercial design, unless the context is linked to a venue or event. In which case, the client should be the manager of the venue, rather than the family members (user group). Site visits to understand the logistics for food production and how this influences product design would in most cases be more useful than the many menus that remain unannotated or analysed for the portion size, cost, seasonality, combination of foods, finishing techniques etc. There frequently remained many unresolved areas of research that would have given greater scope for the full range of marks to be awarded. Research 'padding' with background research is largely unhelpful, and candidates would be better guided to utilise selective, focussed research identified from the analysis and clarification of design needs.

Candidates should introduce the client/user group at this initial stage, and identify how their client would be able to offer critical feedback at various stages during the design process. The client needs to be used to identifying the main issues for study, and to allow good analysis and focussed research. Many candidates utilised their client's knowledge and expertise by asking relevant and probing questions that enabled candidates to consider some of the technical implications for analysis and research. For example, analysing the commercial equipment and facilities, safety, quality, time and temperature controls required for commercial manufacture, stock control and relevant sustainability issues for the product linked to the proposed use, venue or topic. Analysis should clarify design needs and aid the selection and use of research.

Research does not need to exceed three pages of A3 paper. Research must be useful and purposeful, to aid the writing of the specification and planning product design and development work.

The use of product analysis and existing product research should be instrumental in this section. Where candidates applied their understanding of technical specifications (form, function, performance requirements, manufacturing implications and environmental considerations) to the range of food products

chosen for product analysis and disassembly, they invariably retrieved a far better depth of understanding about these products and could usefully apply this information to the writing of their specification. In most instances, disassembly needs to be for more than one product within a product range, to allow candidates to uncover the work of a professional designer and how they can solve a design need by identifying the main technical considerations for these products, as well as uncovering any potential problems and applying this information to their design work.

Sustainability was addressed by most candidates, although for some it was contrived.

A summary of the main findings of research is desirable as it allows candidates to analyse their research in order to write a product specification that is relevant, meaningful and measurable.

Section B: Product specification

All candidates presented a specification of some kind even if it was a generic list of points. Many candidates justified their specification points, and measurability was often evident with good references to weight, portion size, component dimensions, price ranges, and sustainability linked to the performance requirements of the products analysed in section A.

Where sustainability was realistically covered it was often through the connection to sustainability in the problem at the outset, or candidates kept a focused eye on seasonality, fair trade, local produce, food miles or ethical farming such as organic or free range. Where candidates used the technical specification points (detailed in the Edexcel guidance document) to organise the product specification with technical, realistic and measurable criteria, it was possible to justify their inclusion from the summary of research findings. The specification must be informed by research findings and written in consultation with the client/user group to ensure that the criteria meet the needs identified previously. Where candidates had ensured their specifications were technical and measurable, testing and evaluating in section F was far more successful.

Section C: Design and development - Design

The moderating team reported a noticeable improvement in this section, with many candidates managing to produce a range of 4-6 technical design ideas, including reasons for selection, the working characteristics of ingredients, techniques and processes, third party feedback and development opportunities supported by research information that addressed the needs identified in the specification. It would benefit centres to consider the number of components within a food product when considering the challenge and demand of a product. At A2, a wide range of

different components (a minimum of four) should be presented within a food product.

Client feedback, good quality photographic evidence and critical evaluation using the specification points should be included to access the higher marks. Many candidates embraced flair and creativity in this section with some excellent practical work applied to realistic and workable ideas by creating food products with a wide range of skilful components, preparation, processing and finishing techniques, that was evidenced in their written portfolios as design decisions.

Section C: Design and development - Review

It was pleasing to see most candidates presenting this as a separate review section in a tabulated format to objectively assess the suitability of each design idea for the intended purpose, analyse development opportunities, consolidate their review against the specification with client feedback, and make important development decisions. After this selection and rejection process, a summary is helpful to communicate which design idea is being taken forward to the development stage and aids the 'design story'. Photographic evidence supported decision making.

Section C: Design and development - Develop

Evidence of three good quality developments that could be compared, reviewed and evaluated against the relevant design criteria allowed candidates to demonstrate their technical knowledge and understanding of ingredients, components, techniques and processes within commercial design. Summaries in table form were effective at each stage of design and development.

Developments were mostly appropriate, but there were still some very cosmetic and superficial developments. Development means 'change', and this should be shown in candidates' work through their ability to use the results from the review, and bring together the best or most appropriate features of their design ideas into a coherent and refined final design proposal that meets all of the requirements of the product specification and matches the client/user group needs. It is not acceptable to simply take an initial idea and make superficial or cosmetic changes to it and then present it as a final developed proposal.

The final developed design proposal should be presented as either a manufacturing specification or final design proposal, evaluated objectively against the points of specification and the client/user group needs to justify the design decisions taken, and should be recorded in detail by candidates. Client feedback should be referenced in detail at this point in order to justify and clarify final design details that may be compromises between the student's ideals and the client's preferences. There should be enough technical information (specific tolerances and dimensions)

present to enable a skilled third party to manufacture the product as part of the commercial design methodology.

Section C: Design and development - Communicate

Most candidates achieved significant marks in this section and some displayed excellent standards for a range of communication skills. Annotation was used to convey design and development work, with good explanation and detailed technical information. Google SketchUp (CAD) and some highly technical drawing skills with rendering were a welcome enhancement to the design and develop sections. Most candidates presented a final design proposal with sufficient information to allow third party manufacture.

Section C: Design and development - Planning

Planning was generally pleasing with a tabulated production plan conveying detailed consideration of realistic time scales, sequence of manufacture, quality control, safety checks and deadlines for the scale of production. Justification of safety and quality checks must be evidenced in order to attain the top box marks.

Some quality and safety checks presented by candidates were very generic, repetitive or vague with limited reference to critical control points, and this reduced their potential of achieving the top box marks.

Section E: Making - Use of equipment

Manufacture in the test kitchen varies enormously in terms of quality, technicality and complexity. Where candidates had selected simplistic, unchallenging practical work, it was not possible to demonstrate their ability to use a range of equipment, even if this was with skill and accuracy. Health and safety issues and inherent risks pertinent to food handling or production were generally acknowledged through the production plan.

Section E: Making - Quality

As before, there was evidence of high level work containing many components and skills that allowed candidates to demonstrate creativity, flair, accuracy and precision. The importance of high quality photographic evidence throughout the design, development and manufacture work is obvious. Food styling, structure and quality of photographic evidence continue to make steady progress and many centres are adept at insisting that candidates comply with this requirement.

However, low level making processes lacking A2 technical skill or finishing techniques continues to be an issue. In many cases, the addition of an extra component or two could have turned an average product into something more

skilful and interesting. Marking continues to be quite lenient in this section. Some work was presented and photographed very poorly. It was disappointing when the final product lacked the skills that had been trialled, developed and tested in the design and development stages.

Candidates who demonstrated their technical knowledge of techniques, ingredients, components and processes with annotation, clarity and justification with reference to their specification were rewarded with high marks.

Demanding high level practical skills and techniques with a quality finish continues to need focus for GCE A2 level.

Section E: Making - Complexity/Demand

The moderating team reported that this continues to vary enormously, ranging from simplistic, unchallenging design and manufacture work to high level advanced skills, worthy of A2 level showing challenge, demand, accuracy and precision in their use and execution within food products.

Section F: Test and evaluate

Where candidates had ensured that their specifications were technical and measurable in section B, testing and evaluating in section F was far more successful.

The link between criteria B and F remains an area requiring some attention, as simple specification statements presented in criterion B could not be used effectively to test the quality and performance of the final product, because they lacked technical detail (e.g. products must be of individual size) or were immeasurable (e.g. it must have a long shelf life) or were unrealistic (e.g. suitable for all adults). Testing was simplistic or superficial in these cases. Many centres simply evaluated their work against the design criteria, with subjective comments or a brief summary of work completed for the task.

Relevant, measurable points of the design brief/criteria must be objectively referenced, to achieve the top box marks, with third party feedback from the client and/or user group. A description and justification of a range of tests that will be used to check the performance or quality of the products must be included in this section. This might include a range of different sensory tests, storage life tests, transportation testing, viscosity tests, and tolerance testing against a manufacturing specification and nutritional analysis where relevant to the design brief. Candidates must use the information from client feedback, third party testing and evaluation to make suggestions for possible modifications and future improvements to the product, linked to the quality and/or performance of the product.

Life cycle assessment (LCA) of the final design proposal saw a significant improvement this year, with excellent application of sustainability presented as a flow chart with relevant comments linked to the environmental impact of the product throughout its manufacture.

Grade Boundaries

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