Year 12 Design & Technology

 Innovation Case Study Assessment Task 2023

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| **TOPIC**: Innovation & Emerging Technology Case Study report | **MARKS: ￼.** /20  |
| **SUBMISSION REQUIREMENTS:** Due Date: Wednesday 13th December 2023 (Wednesday week 10)Submit on Canvas by 11.59pm | **WEIGHTING:**  20% |
| **OUTCOMES TO BE ASSESSED:****H2.1- Explains** the influence of trends in society on design & production.**H2.2- Evaluates** the impact of design and innovation on society and the environment.**H3.1- Analyses** the factors that influence innovation and the success of innovation.**H5.2- Selects** and **uses** appropriate research methodologies and communication techniques.**H6.2- Critically assesses** the emergence and impact of new technologies, and the factors affecting their development. |
| **DIRECTIONAL VERBS:****Explain** – relate cause and effect; make the relationships between things evident; provide why and/or how.**Evaluate** – make an idea or situation clear to someone by describing it in more detail or revealing relevant facts.**Analyse** – identify components and the relationship between them; draw out and relate implications.**Selects** – carefully choose.**Uses**- the action of using or taking from something.**Critically assess**- add a degree or level of accuracy depth, knowledge and understanding, logic, questioning, reflection, and quality to assessing (Make a judgement of value, quality, outcomes, results, or size) |
| **TASK DESCRIPTION:**You will be required to submit an in-depth case study report on an innovation of your choice. Alternatively, you may choose from the following innovations:* The Sunsquirt- automated sunscreen dispenser
* Bakeys edible cutlery
* Lego Braille bricks
* Zeen- Mobility walker
* Redefine meat- 3d printed meat
* Evie ring- smart ring for women’s health
* Petit Pli- expandable clothing

In this case study report the following criteria needs to be addressed:1. Name of the innovation and description of what the product, system or environment involves.
2. ***Describe*** the designer(s) or design team that worked to develop the innovation.
3. ***Explain*** how the steps undertaken in the design process have impacted the success of the innovation.
4. ***Analyse*** the factors that have impacted the success of the innovation.
5. ***Explain*** the cultural and historical influences that have impacted the success of the innovation.
6. ***Discuss*** the entrepreneurial activity surrounding your innovation.
7. ***Evaluate*** the ethical and environmental issues relating to the innovation.
8. ***Critically analyse*** the impact that the innovation has had/ or has the potential to have on Australian society.
9. A detailed bibliography must be included after the report.
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| **ASSESSMENT CRITERIA:*** You may use the scaffolded templates provided in this assessment task to assist you with your case study report.
* Online resources have been made available to you on Canvas. These include work samples and template files. These can be found in the **Assessment task folder** in the Year 12 D&T canvas account.
* **Innovations** are products that create a new need or satisfy an existing need in a totally new way. Innovation involves changing existing design or is when something new or different is introduced. Your innovation should be a new or emerging one.
* Examples of innovations could include those which assist or enhance health and medicine, leisure and lifestyle, communication, transport, education and so on. Students are expected to choose a current or emerging innovation, not one that is outdated.
* Completed report must be submitted via canvas before or on the due date. Students may submit a hardcopy as well as submitting on canvas- however, this is not compulsory.
* An expected word range for this task is 2000 (approximately 8-10 pages).

**Report Criteria**Students are to **select** and **use** research methodologies to investigate a new / emerging innovation. A detailed report must be submitted including various **communication** techniques such as photographs, hyperlinks, charts, tables, diagrams, sketches, and cognitive organisers. The report must be written in an articulate and succinct manner. Students are encouraged to use the following criteria and word limit suggestions.**Investigation of the design process**1. ***Name of the innovation and description of what the product, system or environment involves.***
* You will need to name your innovation and explain it in detail. Think about what it is? How it works? What it does? Why has it been developed? What need is it addressing? And what the innovation will be used for?
* Include at least one detailed and annotated picture of the innovation.
* Suggested 250 words.
1. ***Describe the designer(s) or design team that worked to develop the innovation.***
* You will need to investigate and give a detailed description of the designer/ designers/design team that worked on developing the innovation you have researched. You should include a biography of the designer(s)/team addressing country of origin of the innovation, education & training, the type of design profession, achievements & awards. If you are addressing a design team, you may want to give a more wholistic approach to the expertise and skills of the various designers.
* Include photographs if you can access them.
* Suggested 200 words.
1. ***Explain how the steps undertaken in the design process have impacted the success of the innovation.***
* Steps of the design processes would include (but not limited to) identifying a need, project management, ideation and development of solutions, research and testing, production, evaluation, marketing, and protection of intellectual property.
* Suggested 250 words.

**Analysis of the factors that impacted the success of the innovation.**1. ***Analyse*** *the factors that have impacted the success of the innovation.*
* Consider the positive **and** negative implications on the success of your innovation by addressing timing, available and emerging technologies, cultural factors, political factors, economic factors, legal factors, and marketing strategies.
* 400 words
1. ***Explain*** *the cultural and historical influences that have impacted the success of the innovation.*
* Explain the historical or cultural factors that have influenced the development of the innovation. What has happened in the past? Has a change in culture or society created a need? Is the innovation and improvement from another design?
* Suggested 200 words.
1. ***Discuss*** *the entrepreneurial activity surrounding your innovation.*
* Entrepreneurial activity is vital to the success of any innovation. This is an activity that usually involves risk taking. Sometimes businesses / people invest into the development and production of an innovative design to make financial gain. Sometimes the designers themselves invest into their own design to make a financial gain and see through their innovative idea. You need to identify who has taken the risk to make the innovation a reality and describe how was it done.
* Suggested 200 words.

**Evaluation of the impact that the innovation has on society and the environment.**1. ***Evaluate*** *the ethical and environmental issues relating to the innovation.*
* You need to evaluate the positive and negative ethical and environmental implications of the innovation. Some of these issues may include; assessing the impact that the design has on the individual consumer, health and safety, protection of intellectual property, privacy, laws and legislations, exposure to the undesirable, advertising of the design, testing on animals, accessibility to all people- elderly, disabled, poor, sustainable design, impacts on the environment, impacts on the community, minority groups, the right to alter natural order, overseas production etc.
* Suggested 400 words.

**Critical assessment of the impact of the innovation**1. ***Critically analyse*** *the impact that the innovation has had/ or has the potential to have on Australian society.*
* Critically analyse how the innovation impacts or has the potential to impact Australian society in both positive and negative ways. Address the following questions in your response.
* Does the innovation improve the quality of life? How?
* Does the innovation make tasks easier, safer, faster, more efficient? How?
* Does the innovation impact our health- make us healthier/fitter, unhealthier/ unfit?
* Does the innovation harm or sustain the environment? How/why?
* How are Australian’s impacted? - both positively and negatively.
* Suggested 400-500 words.

**Bibliography**1. ***A detailed bibliography must be included after the report.***
* It must be presented in the correct format in alphabetical order.
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|  **ASSESSMENT MARKING CRITERIA** |
| **Innovation Case Study Report** | **Mark** | **Grade** |
| An **outstanding** case study report which **selects** and **uses** a variety ofresearch methodologies to investigate a new / emerging innovation.Extensive analysis of the factors affecting the innovation’s success through the inclusion of all of the following:* *A comprehensive description of the innovation and its development*
* *A thorough explanation of all steps of the design process undertaken*
* *An extensive analysis of the factors that have impacted the success of the innovation.*
* *Detailed explanation of the historical and cultural factors which have impacted the success of the innovation including emerging technologies.*
* *Extensive discussion around entrepreneurial activity and linking this to the success of the innovation.*
* *The explicit explanation of a variety of ethical and environmental issues relating to the innovation.*
* *A critical analysis of the impact the innovation has on Australian society.*
* *A comprehensive and correctly formatted bibliography which show evidence of the use of a variety of research methodologies.*
 | 18-20 | A |
| A **high-quality** case study report which **selects** and **uses** research methodologies to investigate a new innovation.Provides anin-depth analysis of the factors affecting the innovation’s success through the inclusion of the following.* *A detailed description of the innovation and its development*
* *An explanation of the steps of the design process undertaken*
* *An analysis of the factors that have impacted the success of the innovation.*
* *A clear explanation of the historical and cultural factors which have impacted the success of the innovation with reference to an emerging technology.*
* *Detailed discussion about the involvement of entrepreneurial activity and links to the success of the innovation*
* *Explanation of ethical and environmental issues relating to the innovation*
* *A detailed analysis of the impact the innovation has on Australian society.*
* *A detailed and correctly formatted bibliography which show evidence of the use of research methodologies.*
 | 14-17 | B |
| A **sound quality** case study report which **selects** and **uses** research methodologies to investigate an innovation.Provides some analysis of the factors affecting the innovation’s success through the inclusion of the following.* *A description of the innovation and/or its development*
* *A detailed description of the steps of the design process undertaken.*
* *An explanation of the factors that have impacted the success of the innovation.*
* *A detailed description of the historical and cultural factors which have impacted the success of the innovation.*
* *A sound discussion about the involvement of entrepreneurial activity and linking to the success of the innovation.*
* *Description of some ethical and environmental issues relating to the innovation*
* *Explanation of the impact the innovation has on Australian society.*
* *A correctly formatted bibliography*
 | 9-13 | C |
| A **basic quality** case study report which attempts to **select** and **use** research methodologies to investigate an innovation.Provides a description of the factors affecting the innovation’s success through the inclusion of the following.* *A brief description of the innovation*
* *An outline of the steps of the design process*
* *An outline of the factors that have impacted the success of the innovation.*
* *A description of some historical and cultural factors which have impacted the success of the innovation.*
* *Identifies the involvement of entrepreneurial activity.*
* *Describes one ethical and environmental issues relating to the innovation.*
* *Provides a description of the impact the innovation has on Australian society.*
* *A limited bibliography is submitted.*
 | 5-8 | D |
| A **limited** case study report which attempts to **select** and/or **use** research methodologies to investigate an innovation.Provides an outline of the factors affecting the innovation’s success through the inclusion of the following.* *An outline of the innovation*
* *An outline of the limited steps of the design process*
* *An outline of the factors that have impacted the success of the innovation.*
* *A brief description of some historical and cultural factors which have impacted the success of the innovation.*
* *Identifies limited ethical and environmental issues relating to the innovation.*
* *Provides a description of the impact the innovation has on Australian society.*
* *A bibliography is not evident.*
 | 1-4 | E |