Design & Manufacture

Research Techniques

Design briefs pose a lot of questions such as who will buy the product, what would they be willing to pay and what do consumers needs/want the product to do. It is the job of the research team to find this out.

Questionnaires

These a series of multiple choice questions that can find out information on:

- Aesthetics
- Target Market
- Price
- Consumer needs and wants in a product

Advantages

- Multiple choice questions are quick and easy to analyse
- Questionnaires can be sent to a large number of people to cover a broad target market

Disadvantages

- Often questionnaires have a poor return rate
- Multiple choice questions limit the detail available in answers

Key Stages

Exam Question

Before

- Work out appropriate questions and how best to word them
- Find out how many people will be asked
- Find out who will be asked the questions
- Identify the best method to distribute the questionnaires; email, post etc

During

- Issue questionnaires
- Remind people of deadlines
- Communicate deadline and methods of return

After

- Gather results
- Analyse results and identify key points
- Make changes to the design or specification

Survey

This is like an interview on a much bigger scale. In a survey researchers would ask consumers a series of open ended questions and jot down their answers. These could be questions on:

- Aesthetics
- Target Market
- Price
- Consumer needs and wants in a product
- Comments on the performance of existing products

Advantages

- Researchers can ask follow up questions to seek clarity on answers
- Guaranteed return/participation rate
- Answers may be more honest than in a questionnaire as consumers aren't given options and instead volunteer their own answer

Disadvantages

- Far more time consuming than a questionnaire
- Answers are difficult to analyse

Key Stages

Before

- Work out appropriate questions and how best to word them
- Find out how many people will be asked
- Find out who will be asked the questions

During

- Carry out surveys

After

- Gather results
- Analyse results and identify key points
- Make changes to the design or specification

Focus Group

This is like an interview carried out in a group setting. Questions could be based around:

- Aesthetics
- Target Market
- Price
- Consumer needs and wants in a product
- Comments on the performance of existing products

Advantages

- Researchers can ask follow up questions to seek clarity on answers
- Guaranteed return/participation rate
- Faster than a survey
- Group can bounce ideas off each other

Disadvantages

- Some people may not answer honestly in a group setting
- Answers are difficult to analyse

Key Stages

Before

- Work out appropriate questions and how best to word them
- Find out how many people will be asked
- Find out who will be asked the questions

During

- Carry out focus group
- Take note of key answers or ideas generated

After

- Gather results
- Analyse results and identify key points
- Make changes to the design or specification

Research Techniques

Product Comparison

This is when researchers will look at existing products and competition and evaluate them against each other. This task might be carried out by the research team themselves or may look at existing date using things like Which? Reviews and comparisons. Evaluation factors might include

- Price
- Performance
- Secondary functions available
- Compatibility

Advantages

- Quick and easy to carry out
- Information is fact based

Disadvantages

- Only fact based elements can be compared there is no way of comparing design factors such as aesthetics as that comes down to personal opinion.

Key Stages

Before

- Work out the best or most important factors to compare
- Identify the best competitor products to include in the comparison

During

- Carry out comparison using technical data and available information

After

- Gather results
- Analyse results and identify key points
- Make changes to the design or specification in order to keep up with the competition

User Trip

A user trip is an exercise carried out by designers or members of the design team acting as users to identify product strengths and weaknesses. It looks at design factors which can only be evaluated through product interaction/use. This might be how easy a product is to operate, clean, set up or dismantle. Factors they might look at will include

- Performance
- Ease of use
- Ease of maintenance
- Ergonomics

Advantages

- Quick and easy to carry out
- Information is experienced based
- These user trials can only be carried out on prototypes or competitor products

Disadvantages

- Designers participation in the design process might cloud their judgement when evaluating their own product

Key Stages

Before

- Work out the best or most important factors to compare
- Identify the best tasks to complete in order to evaluate these factors
- Identify the appropriate or different environmental or physical factors that need to be taken into account e.g can a kitchen utensil still be operated effectively with wet hands

During

- Carry out tasks taking note of key strengths and weaknesses
- Tasks should also be recorded by an observer who can give feedback and recommendations based on what they seen

After

- Gather results
- Analyse results and identify key points
- Make changes to the design or specification

Exam
Question

Research Techniques

User Trial

A user trial is different to a user trip in that it involves consumers carrying out tasks on prototypes to identify strengths and weaknesses. Tasks will be based around factors such as how easy a product is to operate, clean, set up or dismantle. Factors they might look at will include

- Performance
- Ease of use
- Ease of maintenance
- Ergonomics

Advantages

- Information is experienced based
- Trials can be carried out with a wide group of users to ensure the product is suitable for all

Disadvantages

- Can be time consuming

Key Stages

Before

- Work out the best or most important factors to compare
- Identify the best tasks to complete in order to evaluate these factors
- Identify the most appropriate users to be included in the tasks

During

- Issue the tasks to the user groups
- Tasks should be recorded by an observer who can give feedback and recommendations based on what they seen

After

- Gather results
- Analyse results and identify key points
- Make changes to the design or specification