

Multipurpose Table Kids

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Abstract

The necessity of furniture product is now becoming a trend from time to time in accordance of current technology development. Mostly in furniture demand, an increasingly demand for furniture that has more compact and space saving which can be used in limited space. To address this problem furniture designs with multifunction can be used in limited space such as small room. Multipurpose kids table is able to achieve high demand in the world market based on demand from consumers and the problem they faced. The data was analysed based on the questionnaire that had been distributed to one hundred correspondences from people around UiTM Jengka such as staff, lecturer and student. Then data were analysing by SPSS to get the results. Most correspondent give positive feedback to the material used, space saving multifunction concept, suitability of product to customers and the marketable of the product designated. Overall, the multifunction table is well accepted by most of the correspondence since it provides benefits to the users and customers. Other, based on the result of users agrees or prefers to use multipurpose kids table as part of their household items.

Keywords: multipurpose, kids, table

1. INTRODUCTION

This project is to design of multipurpose table kid. This project is to improve and enhances the functions of current market table kid. Furthermore, the table can be expanding to become 2 tables which allow multi-user and there are 2 chairs inside table which require pulling up before use it. Overall, the project will meet the acquire skill of design, analysis and concept of ergonomics

2. LITERATURE REVIEW

2.1 Furniture industry in Malaysia

Producing industry in Malaysia are the one of wellsprings of driving economy advancement particularly in wood based furniture industry that likewise given extraordinary development of the nation trade wage. As indicated by Malaysian investment development authority (MIDA, 2011) more than 90% Malaysian furniture is for fare. Malaysia is rich in characteristic asset, for example, timber, human capital furthermore progress in engineering.

2.2 Furniture design

One can consider configuration arranged generation. It's a procedure creating from innovative astute, spontaneous choice, and diligent work. Outline is an innovative procedure which blends the physical capacities of an item with engaging contemplations (Abdul Kalam & Sivathanu Pillai, 2004). Furniture is one of man's most prized properties. He sits on it, mulls over it, consumes on it, and

maybe above all, puts his most significant properties into it" (Eckelman, 2003). Since the furniture originators are principally dependent on patterns.

2.3 Benefits of design in industries

An objective in planning furniture is to consider all outline viewpoints in a thorough and united style, while safeguarding centre and genuine responsibility upon the essential ideas and thoughts that rouse plan. There is an impact on plan that has a connection with the quality

2.4 Multifunction Furniture product

Overcrowded households could result not only from the number of family members, but also from mishandled space as well. This problem had answer which is multifunctional furniture. Furniture could be designed in a way to serve various purposes. This space saving concept has been around for many years, however, it was not until lately that the importance and convenience of multifunctional furniture was accepted, mostly due to the increase of metropolitan existence which is related with limited living surface area. (Kilmer & Kilmer, 1992, p. 491).

2.5 Ergonomic concept of design

Ergonomics is about matching equipment to the user and the task to the employee. Another term used overseas for ergonomics is human factors. Kilmer & Kilmer (1992) define ergonomics as the study of the interactions between human beings and their purpose in the environment

2.6 Kid's Table

A table is a form of furniture including a flat and stationary horizontal upper surface used to support objects of interest, for storage or display. Tables come in a wide variety of materials, shapes, and heights that depends on their origin, style, and intended use. All tables are composed of a flat surface and a base with one or more supports, or legs.

2.7 Block board

2.7.1 Properties

A standard block board is a board with a robust wood centre, which might then be stuck and overlaid with a cross grain rotational lacquer or with chipboard or MDF. The particular item structure utilized for square sheets implies that the completed item may be marked as 'strong wood'. It takes screws very nearly and additionally strong wood and other working parameters are as great. Block Boards are a sort of plywood in which the finishes are stuck on both sides on wooden secures outline. Wooden strips are put over a surface of one or more sheets to avert, distorting and fortifying and so on (Pradesh, 2002).

2.7.2 Uses of Block board

The key advantageous asset of block board over plywood is that the heart of the board is produced from thick sections of wood. Hence, the manufacture of block board doesn't require the manipulation and fabrication of a sizable quantity of veneers, which reduces cost and manufacturing time (Morrell 2002). Typical applications are furniture, backs of cabinets, and centre panels of framed doors. Block board can be useful for partitioning, exhibition panels, tables, entertainment centres, speaker boxes, and panel moulding. It's used extensively for concrete formwork in Europe (Pradesh, 2002).

3. MATERIALS AND METHODS

3.1 Material selection

Advantages of Block boards are light in weight and comes with a high strength. It also easy to handle and work with and used for all site applications, furniture and door manufacturing with high utility. The disadvantages of block board is comparative expensive. Thus, these materials are the best selection for production of multifunctional table.

3.2 Methodology

3.2.1 Design Process

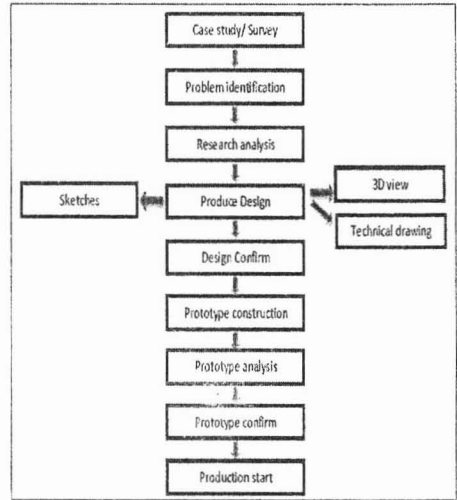


Figure 1: Design Process

3.2.2 Final Product Preparation

Cut to end size, edging, assemble the part and last becoming final product

3.3 Data analysis

3.3.1 Bill of Materials (BOM)

Before producing a product, it is compulsory to prepare a Bill of Materials (BOM) because it will be used as guidance in buying raw materials.

3.3.2 Part List

The part list also is important to be prepared as it may assist in confirming type of mechanical hardware and to calculate cost of mechanical hardware that might needed during production process.

4. RESULTS AND DISCUSSIONS

Note: 1-Poor 2-Moderate 3-Good 4-Very Good
5-Excellent

A- Not significant B-significant

AB-Not significant and significant

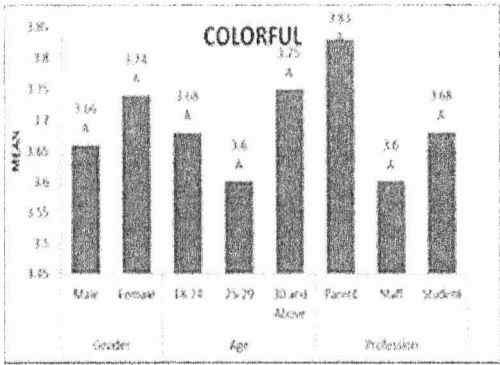


Figure 2: This product concept based on 'colourful' is acceptable.

Figure 2 show that the based concept for this product production and design is colourful. Overall, for the gender, age and profession it indicates that there is no significant between three variables there, regarding to the suitability of the colourful concept for the design or multipurpose table kids. They rate show that all above 3 pointers. For the highest rate is show among parents which is 3.83. Parents mostly agreed with the concept for the product because parents know that their children interests to the colour and how they will react with the product function. Correspondent between age and profession show that specifies age for the 25-29 and staff are equivalent that is 3.6, however there is no significant between all variable. It might be staff from the age 25-29 they prefer to enhance colourful with different concept such as darker any concept.

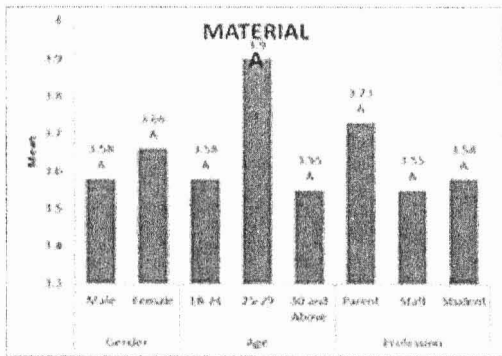


Figure 3: Blockboard as a main material is suitable for this product

Figure 3 presented that raw material used for this product production is blockboard as a main material. Generally, these entire variables remain no significant between the gender, age and profession. Approximately for the material choose is blockboard are really suitable due to the all respondent scores. Bar graph designates that the highest mean is for the age between 25- 29 years old which is 3.9 regarding to the material used. 25-29 can be classified into adult respondent, they agreed with the

material used due to the knowledge of the blockboard. They maybe have studied about the material and already recognised the durability and the strength in the past earlier. And for the lowest shows there are between two variables which is 30 and above and staff which is mean 3.55. Staff which is 30 and above prefer another material maybe such as solid wood or other component added for the lasting durability maybe.

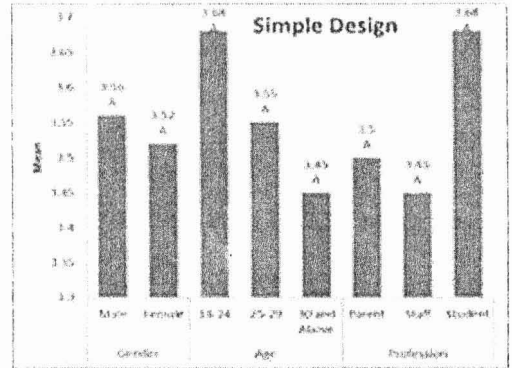


Figure 4: The design is simple and suitable for children use

Figure 4 show the product design is simple and suitability for the children use. Overall the graph show that mean for the three variables remain no significant which is all good or mean rates is among 3 and something. Concerning to the simple design and suitability, mean show that there are two highest variables which is student and age between 18-24 is 3.68. They approved that because student from the age between 18-24 is studied about the design used. As we know student are already exposed about the design unlike others. Lowest indicates that there are from staff which is 30 and above that is 3.45 mean. Staffs prefer design to be more complicated maybe and added unique component for better usage.

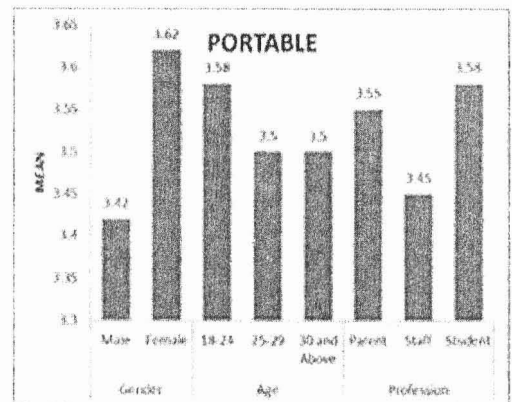


Figure 5: This product is easy to be handled and portable

Figure 5 is for the product mean easy to be handled and portable usage. There are no significant between all three variable which is all mean indicates good rate. Female

respondent is the highest which is 3.62 and it showed that female more agreed with this product regarding to the portability and easy to be handled. This product functional is really suitable based on this respondent. Female maybe got highest mean because they like it and based on their taste for the product are suitable. For the lowest is among male. It show 3.42 mean, but there is no significant with the highest. They might prefer to make this product more manageable due to existing product.

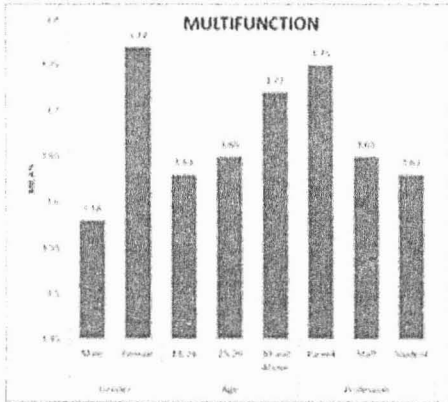


Figure 6: This product is adjustable for multi purposes uses

Figure 6 is bar graph for the product is adjustable for multipurpose use for this multipurpose table kid. Surveys done by three variable which are by gender, age and profession. Based on the graph it shows that overall perception by these variables is not significant at all. They all totally agreed with the concept product which is multifunction and it means no different opinion from the respondents. As can see these product are stand with table, chair and drawer all in one product. Highest mean for female is 3.77 and lowest is from male which are 3.58.

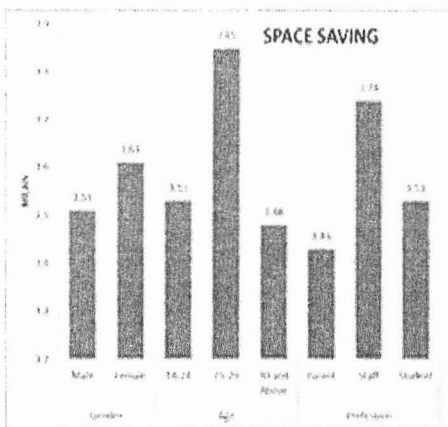


Figure 7: This product is suitable for limited space

Figure 7 show that the product suitable for user that has limited space in their house or room. Graph indicates that the highest is among age which is among 25-29 years

old, it shown mean 3.85. People in this range age choose to be highest because they commonly stayed in the hostel or rental house, so they like to prefer for the limited space match with the required space they live which is more compact. For the lowest, graph show it's among parents. Parents agreed with the space saving because of the not significant but they likely prefer the product to be more compact, maybe these product should be added with learning component by side of table and their children can use product make best use of.

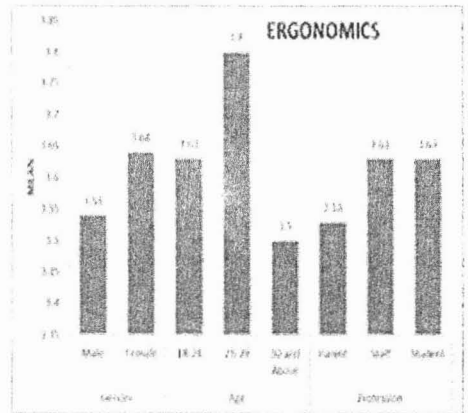


Figure 8: This product been produced based on ergonomic concept

Figure 8 shows the multipurpose table for kid based on ergonomics and anthropometrics concept. Respondent from age 25 - 29 is the highest mean showed regarding to the ergonomic concept. It can be concluded that they know the suitable product for the owner used. Suitable here means that included body measurement when sitting on this product and how the working environment has done (shape and size). For the children ergonomic it state that knees bend should be 90 degree and feet should be flat on the floor, so as this product is design. Lowest is 30 and above but there are no significant, they prefer this product to be added back seat for the chair for more comfortable usage.

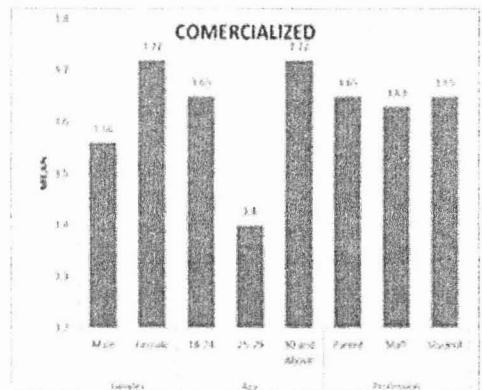


Figure 9: This product can be commercialized

Figure 9, it shows the results for the suitable for commercialization in the market for the product. From the graph above it indicates that overall agreed and there also shown not significant from all respondents. Based on the result, from the highest female from the age 30 and above are equivalent, it is 3.72. It might be they agreed with the product to be commercialized due to unique and attractive design that is suitable for their children used. But there is not significant among all rates mean. People from the age 25-29 are the lowest which is 3.4 due new products in the market. So they are not sure with the product grown capability whether success or not.

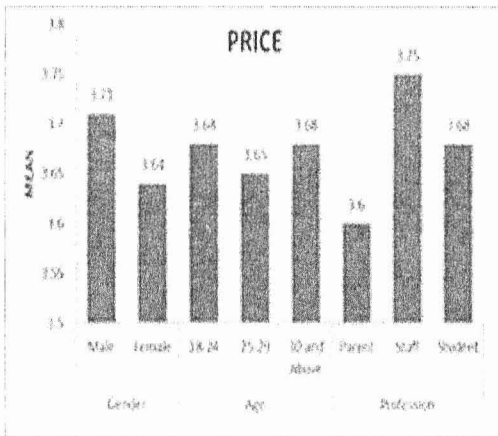


Figure 10: The price for this product is between RM200 – RM250

Figure 10 show that the price of multipurpose table for kid. Price has been put based on the material used and labour cost. Graph express that lowest is 3.6 and highest is 3.75, so based on that it can be concluded that all agreed with the price. Rated is all among the respondent are good. Staffs is highest because they know about the price that already existing in the market but parent is lowest because they prefer this product should be higher than expected. It might be they really impressed with the product as they think it should be higher.

5. CONCLUSION

As a conclusion, the based concept of multipurpose table for kid was accepted by correspondents (customers), as it has many advantages and suitable to be commercialized. Besides assist customers with limited space, the multipurpose table kid is new designs that created based on new technology and new opinion. It's have good future product to solved limited space problem and economy problem based on demand from consumer. This design can save space, save budget of user.

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