

Research Paper

A Story-based Design: A Research on Narrative Packaging Design

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Abstract

Designers can use the story, as a common language, to improve the packaging of cultural artifacts. Knife packaging, as one of the most important handicrafts of Zanzan province, can be a factor in supplying and selling this product in domestic and foreign markets. The main objectives of this research were to provide a design process for designing products related to emotions. To this end, a collection of stories related to this product was extracted; 30 users were surveyed and questioned as a sample. This study uses a descriptive-analytical method. In the descriptive part we have studied the storytelling method in the design process and in the analytical section we offered a checklist of stories and proverbs and examined them. Finally, the best story was chosen, and the knife was designed using the principles of storyboarding and scenario planning and considering the story-based packaging designed by principles. After taking time to make sure that the questionnaire was fully understood by the user and conducting the survey, the data were extracted, and statistical analysis was performed. The feedback of the users was reviewed and according to the results, it can be found out that the principles of the story in Zanzan knife packaging design have a significant effect on the interaction and emotions of users.

Keywords: Story-based design, Storytelling, User interaction, Storyboard design, Knife packaging.

1. INTRODUCTION

In the life cycle of a product, the packaging, as an object, plays an important role in product support and prestige. Some scholars believed that it is the first packaging that influences the customers, then it is the product that attracts the customer (Betancur-Muñoz, Osorio-Gómez, Martínez-Cadavid, & Duque-Lombana, 2014). But in Life Cycle Assessment (LCA), packaging has been considered as an environmental degradation factor because of the inappropriate material used in its making and its short

life as well. In this regard some customers focused on the product itself and considered the packaging unnecessary at the first sight and once have received it, the packaging is no longer required. And in certain circumstances, the packaging is a waste-management issue. However, the package designers were aware of the role of packaging in the preservation and delivery of the product to the customers and are trying to improve it (Tim Grant, 2015).

In recent years, the importance of packaging in handicrafts has also been recognized. Zanzan province is considered the pioneer of knife making, Charogh, Tapestry, and Copper in the country. However, the lack of appropriate and standardized packaging has affected negatively the market for

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these products. Undoubtedly, handicrafts are considered among the most important factors of economic development. Mass sales and inappropriate packaging have affected a significant part of the profitability of handicrafts in Zanjan province. Removing the traditional attitude is an issue that has become a big challenge in the field of handicrafts these days. Changing market attitudes requires the creation of a mental relationship between the producers, the consumers, and the understanding of both, about products and technologies through the organization of the “mental models” format. This includes meaning representations such as attitudes, emotions, feelings, symbols, actions, goals, personal values, images, memories of past consumption events, consumption visions of anticipated experiences, and representations of sensory experience like touch, taste, and smell (Ebrahimi, Koleini Mamaghani, Mortezaei, & Saffar Dezfouli, 2018; Teichert, von Wartburg, & Braterman, 2006). One of the most common ways of sharing these experiences is storytelling, which dates back to the beginning of humanity on earth. The end result of a great story is that a person feels an emotion, but emotion can also be felt without telling a story. In this regard, the purpose of this study is to explore a method of packaging design with the ability to represent engaging experiences to attract more consumers. Considering the necessity of economic development in the field of handicrafts, the proper use of product packaging in order to provide pleasure, quality improvement, and the desire to buy and use the domestic industry is necessary. This paper evaluates this new trend, while presenting a detailed critique.

2. THEORETICAL FOUNDATIONS AND REVIEW OF THE LITERATURE

In the 1870s and later, with the formation of a semiotic approach in the field of linguistic and philosophy, designers' attitudes toward meaning and expression have changed (Buchanan, 1985; Bürdek, 2009; Krippendorff, 2005). After years of impressive experience in the field of pure form and geometry, a completely logical confrontation with the form and analytical design, the turn has come to psychology and symbolism in order to find an area for the emergence in this design. Such movements, which include the New Design, Radical Design, and Memphis, transformed the language of the products. These products would not be the ultimate solution to









the problem or the only possible solution, but would also open the way for further research (Ramakers & Bakker, 1998). Many studies have been conducted on semantics and storytelling. The results of research on the impact of stories in the form of short messages on the packaging have been positively evaluated, and storytelling has a great impact on consumer preference when faced with the variety of processed meat products in the store. So many people tended to buy and test new products. In another study, which focused on the effectiveness of the luxury brand advertising with the decoding of a consumer engagement of a consistent story, by creating a theme and engaging different cultures, consumer motivation was clear for interaction, and stories in different cultures were effectively evaluated (Kim, Lloyd, & Cervellon, 2016).

3. STORYTELLING IN PACKAGING

Designers inherently have tried to tell stories and pose a challenge to their audience, whether the story is shaped in the birth process of an idea, or it is a story told at the time of use. Using storytelling in design gets the advantage for desirability, as the user establishes a deeper connection with the products. Entering various topics into different disciplines is not a new matter. For example, the use of a scenario or a storyboard in design studies is a rather new approach. The story is also a matter that many designers have considered unconsciously in their products because it adds the human aspect of the products and gets a deeper level of engagement in the minds of the audience about the products. The story engages audiences by drawing them into another reality. But a good one encourages the reader to think dimensionally and deeply. The story of packaging creates images in the minds of the consumer, which will lead them to search for the next purchase of that product (Roncarelli & Ellicott, 2010). Designers and engineers might lose the ability to innovate in world design if they cannot create a fascinating story for the product (Demirbilek & Sener, 2003).

Table 1 shows examples of packaging with a description. These instances are designed by famous designers and design companies. These types of design are well known, although the common aspect of all is storytelling. They have a story to tell, and the audience always comes along with them, so they can understand the connection of the components very well.

Table 1. Story-centric Packaging Examples (Source: Authors)

Design Name/Designer	Description	Image
1 Smart Egg Joonsoo Kim	The idea of a lamp is similar to an egg's cartoon, the egg is a lamp and the egg's cartoon is for packaging. This design, made of natural resources such as paper and glass, expresses the story of birth. For direct light, the packaging must be returned And the user generates eggs and For indirect light, the door can be packed.	 (Lisa, 2011)
2 Egg Cheep DXION	The packaging is similar to the egg's cartoon, which is actually packing the salt Chickens are waiting to come out of the egg. By opening the pack and breaking the eggs, the chicks are waiting for food with open mouths. They are waiting to be filled with salt as seeds as a salt cheese.	 (Pageonegroup, 2008)
3 The Seeker DXION	A desktop product with applications such as paper, card, and pen holders in the form of a rabbit character that always plays. But it keeps your cards and pen from your busy desk. Making a sense of pleasure at busy hours is one of the advantages of this product. Product packaging is consistent with the philosophy of the design, expressing the character and function of the subject.	 (Pageonegroup, 2008)
4 Look +D TEAM	The packaging of tissue papers is similar to the one-eye icon that comes out of the mouthpiece. Symbolically holds the box for the user so that it is possible to tear the tissue paper from the roll with one hand.	 (Pageonegroup, 2008)
5 Elastic Band SBOOBS	An iconic elastic band that holds the various pieces together. The package shows the story of each of the elastic bands and the symbolic function of each.	 (Pageonegroup, 2008)
6 Thelma's Treats Saturday MFG	Thelma's took the concept of an "oven box" and brought it to life. The Thelma's Treats delivery box features a front flap, so customers truly have to open the oven door to retrieve their warm cookies. The cookies are placed on trays and stacked neatly inside, just like in grandma's kitchens across the country. The box is even printed with stove top burners and a back panel that appears as if it's equipped with control.	 (Butschli, 2014-1-14)
7 Scanwood Mads Jakob Poulsen	Scanwood is Denmark's largest manufacturer of wooden kitchen utensils. By adding the package design a few very simple effects, the Scanwood brand and payoff: Designed in Denmark, made by Nature comes to life, draws attention to the products and, tells the story about sustainability and nature in a modern and appealing fashion. This branded story is now visible and understandable across all different markets and languages, giving the consumer an added experience and a sense of buying a product that grows straight out of the ground.	 (Jordan, 2017-5-10)
8 Kirill Ermoshin	Expedition is a shop in Russia which sells different goods for city dwellers who like to spend their free time in the countryside. Picnics, and short journeys, are their specialties. What distinguishes them from other shops is that they are more about creating a story than just selling goods. They are full of the spirit of adventure and discovery, with a sense of humor. The shopping bags are made like a rucksack to emphasize the company's character.	 (Ermoshin, 14-06-2011)

4. PRINCIPLES AND ELEMENTS OF PACKAGING DESIGN

In the packaging design, it should be noted that the packaging requires different purposes: containment, protection, preservation, identification and information display, market appeal, and user convenience. Without packaging, handling the core product and its marketing would be difficult, inefficient, and expensive (Betancur-Muñoz et al., 2014). The packaging category plays a key role in the marketing of consumer products. Consequently, packaging can be seen in terms of consumer emotional effects, with Donald Norman's approach (2005) to three-step product processing. The first step is apparent aesthetics (unconscious process), the second step is usability and creating pleasure in use (unconscious process), and the third step is social reflections, the association of previous experiences, and personal effects (conscious process). (Norman, 2005).

The packaging design has a clear functional purpose, but it is also a creative element and can be very significant in increasing sales. In addition, it plays a very important social role since a gift packaging is the meaning of love expression and pointing at important memories in life (McDermott, 2007). Packaging sends valuable information about the product, helps to position it in the mind of the consumer. In this way, it has an impact on the consumer's purchase decision. Based on theoretical studies of Silayoi and Speece (2004), Bloch (1995), Grossman and Wisenblit (1999), Butkeviciene et al. (2008), the research model was developed in order to reveal the impact of visual and verbal package elements on the consumer's purchase decisions. In this case, the graphic, color, form, size, and material are analyzed as the main visual elements, whereas product information, producer, country-of-origin, and brand are treated as the main verbal elements of the package. (Fenger, Aschemann-Witzel, Hansen, & Grunert, 2015). The impact of package elements on the consumer's purchase decisions can be stronger or weaker depending on the consumer's involvement level, time pressure, or their individual characteristics. Food and other Fast Moving Consumer Goods (FMCG) are usually treated as low-involvement products. Visual elements of packaging have a stronger effect on consumers in this product category. Conversely, verbal elements of packaging have a stronger effect on those consumers who are in the level of "high involvement" (Adam & Ali, 2014).

It was assumed that time pressure is another important factor that influences the impact of visual and verbal package elements on the consumer's purchase decisions. According to the results of

previous studies, that visual elements of packaging have a stronger influence on product selection when consumers are under time pressure. Conversely, when consumers have free time to make a decision, verbal elements of packaging have a stronger influence. The package, which influences consumers' buying behavior, depends on their individual characteristics such as gender, age, education, and occupation (Kuvykaite & Navickiene, 2009).

5. THE SCENARIO-BASED DESIGN

Several efforts have been made to create passionate and inspiring experiences for users. Creative ideas are very significant factors in expressing ideas and developing them, and in practice, this is true especially in the process of thinking and designing. Experience design based on ideas and participation in the design process is a crucial and significant part of the design in this background. In this case, not only the product itself but also the perceptions and background of the users (such as the environment of the product being in use, users, and interactions between them) can lead them to create new ideas. As the utilized product gets wider, the demand for methodology and new perspectives on this issue is also expanding to the same extent. The scenario-based design is one of the most commonly useful methods. It has been proved that the use of this method in design processes can easily help to lead new and innovative ideas (Yu, 2000). Stories could be used to make scenarios telling a story (Johansson). The scenario-based design uses stories, or 'scenarios', at an early point in the development process to describe how a user might interact with a system. A user interaction is a sketch of use that is intended to vividly capture the essence of an interaction design, much as a two-dimensional, paper-and-pencil sketch captures the essence of a physical design. Instead of focusing on defining system operations, SBD, like other user-centered approaches, it is better to focus on "how people will use a system to accomplish work tasks and other activities" (Theodoros Doukoulos, 2017).

The scenario-centric design method is one of the ways to create a new experience of engaging the user in the design process (Standardization, 1999). This information of gathering methods can be added to any part of the design process or the whole that will lead to project progress, and help the formation of persona and the compilation of a list of needs and desires of the user (Bødker, 1999). The concrete and work-oriented nature of scenarios make them effective representations for human-centered design activities, particularly when these activities included

the participation of end-users or other stakeholders. Scenarios can be quickly developed, shared, and revised. They are easily enriched with sketches, storyboards, or other mock-ups. The scenario behind using them can be directed at many concerns in system development, including documentation design and object-oriented software design (Rosson & Carroll, 2003). The scenario describes the behavioral characteristics and personalities of the users and their activities in using the product to understand different ways to treat the product. The scenario specifies the needs of users in real-world conditions and can be combined with images and photos (MAGUIRE, 2001).

6. THE STORYBOARD-BASED DESIGN

A storyboard is a mechanism and method of design that leads ideology to adapt spaces outside the realm of computing. Historically, this method was initially used in the cinema and advertising industry. In Human-Computer Interaction (HCI) discussions, the storytelling method was enhanced as a tool for showing the sequence of keys in the user-system interaction. Storytelling is a process of describing user interactions with the system based on time, through a series of graphical depictions of a narrative with the text input. The main aspects of the storyboards include time representation, the inclusion of feelings, text, and the level of details (Truong, Hayes, & Abowd, 2006). Using the storyboard-based design method can be useful in two specific ways:

first, using case definitions in the discussion, understanding, and analyzing how technology can reshape human activities. Second, this scenario can be made before the creation of the system and feeling its impact. Similarly, the use of storyboards has similar benefits. In addition, a specific word in text-based states influences perceptions of how to understand the reaction of the system. So, the designers often prefer storyboards to scenarios (with equal data). The storyboards are less biased in terms of visual elements, compared to scenarios (Landay & Myers, 1996).

Existing studies on storyboard tools such as Silk, Denim, and Demais (cited in Landay & Myers, 1996) confirm a scenario in which the user is able to predict performance by supporting and assisting the system. The storyboard is the first step in the process of converting the text and writing to the image. By using the storyboard, designers identified characters, space, and types of moves in their images. The more time spent on the storyboard, the more brilliant the work will be (Winder, Dowlatabadi, & Miller-Zarneke, 2011).

7. DESIGN AND EXPERIMENT

In the preceding sections, scenario writing and storyboards were described. The purpose of the storyboard in the product design is to understand the visual display of interactions. The style of visualization varies according to the need of that stage (Figure 1 and Table 2).

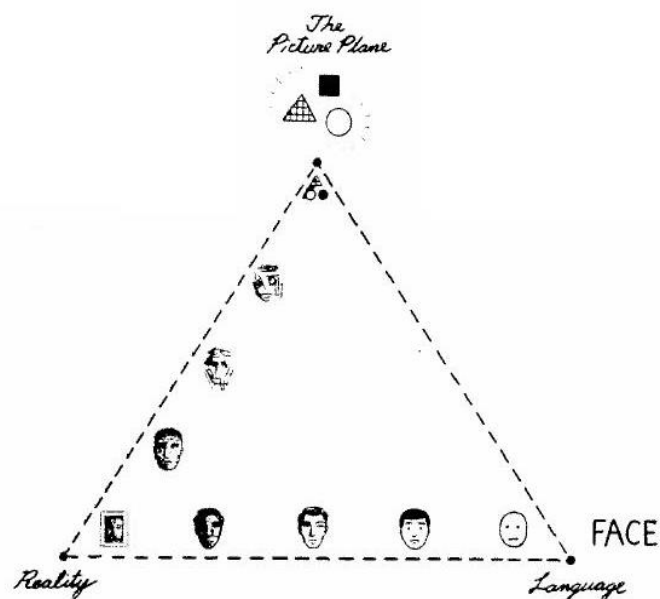





Fig 1. Style in Visualization and the Story Illustrated by Storyboards (McCloud, 1994)

In this section, Zanjan knife packing research was studied more precisely. After conducting objective observations and informal interviews, it was decided to create a “story list” collection and scenario design as a fantasy. In the first stage, the user interaction with the product was examined. Then, 30 users were asked to name objects that shape the form or function of the knife in their minds. Among them, the most widely used examples were selected (Figure 2).

Then, using the obtained words, a story list of short proverbs, anecdotes, stories, and legends were collected. The story has no geographic boundaries, and any story can appeal to any culture. Many of the stories have worldwide popularity, and the same stories have been told since the childhood of Iranian users. For this reason, the choice of stories and proverbs is not considered geographically (Table 3).

Table 2. Different Storyboard Styles and Features of each Style (McCloud, 1994)

		
Photo Realistic It may be a lot to say Tells the final story	Hand sketch Suggests Focuses on attention Invokes the observer's response	Symbol / Sign It points to It may be too low to express Referring to actors and stages

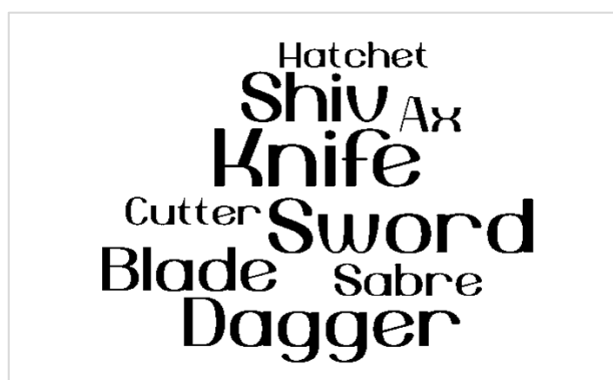


Fig 2. Objects with a Knife Form or Function in the Views of the Audience (Source: Authors)

Table 3. The List of Illustrated Stories using Vocabulary (Source: Authors)

Proverbs, Stories, Legends	Description
1 Even the sharpest knife can't carve its own handle.	Relatives do not betray each other.
2 The wound of words is worse than the wound of swords.	Referring to the story of friendship between a lumberjack and a lion: as they were dining at lumberjack's house, his wife complains about the way the lion dines, the lion gets angry and roars. The lumberjack gets terrified and hits the lion with his ax, and the lion runs away. After a while, they run into each other and the lumberjack asks if the lion is ok. The lion replies: “the ax wound has healed, but the wound of your wife’s tongue still remains”.
3 Sacking the sword	The shout of the struggle is obvious and not secret. In fact, the speaker's purpose is that the person is not deceived and does not dangle from behind. Obviously fighting and not afraid to fight.
4 Backstabbing	Cowardly harm or hurt someone
5 Dig your own grave	Cutting and destroying something essentially
6 He builds lots of knives but none of them has handled	He is not reliable
7 The Legend of King Arthur and the Sword of the Excalibur	In Arthurian romance, a number of explanations are given for Arthur's possession of Excalibur. In Robert de Boron's Merlin, the first tale to mention the “sword in the stone” motif, Arthur obtained the British throne by pulling a sword from an anvil sitting atop a stone that appeared in a churchyard on Christmas. In this account, the act could not be performed except by "the true king," meaning the divinely appointed king or true heir of other pen dragons. As Malory writes: "Whoso pullet out this sword of this stone and anvil, is right wise king born". This sword is thought by many to be the famous Excalibur.
8 If you stab him, he would not bleed	Represents the intensity of anger

The illustrated stories were selected, and users were asked to choose one of the scenarios which is more suitable for knife design and has a better feeling. As Figure 3 shows, story 7 is selected as the final story.

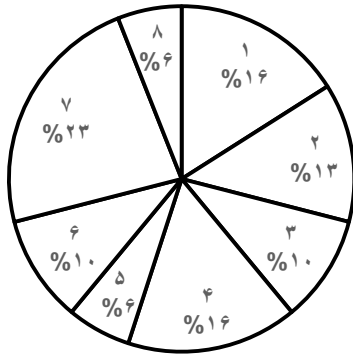


Fig 3. Percentage of User Points in Conjunction with Examples of Proverbs and Stories (Source: Authors)

The story has five basic but important elements. These five components are the characters, the setting, the plot, the conflict, and the theme. These essential elements keep the story running smoothly and allow the action to develop logically that the reader can follow (Crabtree, Alber-Morgan, & Konrad, 2010). As the thoughts flowed, the design team began to extract relationships in the story by the storyboard

and using that, the inspired scenario for the Zanjan knife package was designed (Figure 4).

As the final result, the knife packaging is shaped like a piece of stone that holds the knife. Every time that the user wants to use a Zanjan knife, he/she feels like a king/queen who deserves to pull the knife out of the rock (Figure 5).

In order to study the impact of storytelling on the design, the ideas were given to 70 individuals in a 3D and rendered form in a questionnaire, 62 percent of them were females and the rest were males. Fifty-two of the questionnaires were in the age range of 20 to 30, 14 of them were between 30 and 40, and 9 remaining people were in the ranges of under 20 and over 40. The evaluation criteria were chosen from package designing and elements regarding the story and storytelling factors. Ultimately, the 13 chosen criteria (storytelling, purchase value, interaction, encouraging, entertaining, character, pleasure to use, message, satisfaction, admiration, desire to use, fascination, and sense of pride) were evaluated on a five-point Likert scale. An existing example along with the survey were given to people for more accurate testing (Figure 6). The results of the questionnaire have been displayed and analyzed through SPSS software.



Fig 4. The Storyboard Related to the Story of King Arthur and the Sword of the Excalibur (Source: Authors)



Fig 5. Storyboard Related to the Final Design (Source: Authors)

8. RESULTS

In this study, the storyboard follows the main process of brainstorming. However, it takes some steps ahead and resolves issues with more organization. This technique has involved a high level of participation and helped the design team to understand the context-time. It also helps them to attract leading attention to various aspects and confronting concepts that could be delayed with abstract considerations. Moreover, it linked the “user interaction-product” and the “context-time”. Based on the coefficients, the final result of the evaluation according to the chart (Figure7) shows that story-based packaging has led to more user positive emotions. In order to get a clear understanding of the consumers, there was a question asked at the end of the questionnaire regarding whether there would be any stories engraved in the minds of the interviewed people or not. The obtained results of the three evaluated designs can be seen in the graph. The answers were categorized into three categories: Sword of the Excalibur, No, and Irrelevant Answers. The graphs on the left show the results of the Likert scale in 13 criteria, and the graphs on the right show the user's perception of the story. It has to be pointed that there is a possibility of the unfamiliarity of the consumers with the selected story.

9. DISCUSSION AND CONCLUSION

The packaging design plays a valuable role in the economic flow of societies. The package is often the first point of contact of a consumer with a brand, so the first attention attraction and fast message transfer are very important. The packaging design is beyond the creation of a container for product maintenance, the goal is to create a means for a direct contact with the audience and to create a positive relationship. The package is a story that transmits a narration to consumers and is more than a decorated container; it is a message of a conversation between the buyer and

the seller (Ambrose & Harris, 2011). Companies need to understand the importance of fiction and storytelling to communicate with their customers because even their products may not be as significant as their stories. Storytellers are experts in the art of transferring human emotions, and it is necessary to have a place in the process of designing and presenting the product. In this study on Zanjan knife packaging, the results of research in experimentation, observation, and personal evaluation of users in the form of a questionnaire showed that by storytelling in knife packaging, users are more satisfied with this type of packaging. Using world stories is considered to be the advantage of the handcrafted product packaging. The possibility of reusing this type of packaging over time, even as a knife (which repeated the story with each use), can lead to cultural sustainability as well. This test is based on understanding the importance of storytelling tendency in the packaging design, and its results have been positively evaluated. But it seems that using this method alone is not enough to produce a desirable result and requires designers' skill to extract ideas in the scenario and storytelling process. A storyboard in storytelling and design not only helps the designers in targeting groups, fields, product applications, scheduling, and interacting with involved people but also passes opinions, judgments, or admissions to individuals, throughout the process of ideas and concepts created. The course of studies can be pursued in a wider range of topics. The methods used for storytelling and the use of other prominent methods, such as persona and the establishment of dialogues, are new domains for the continuation of this research.

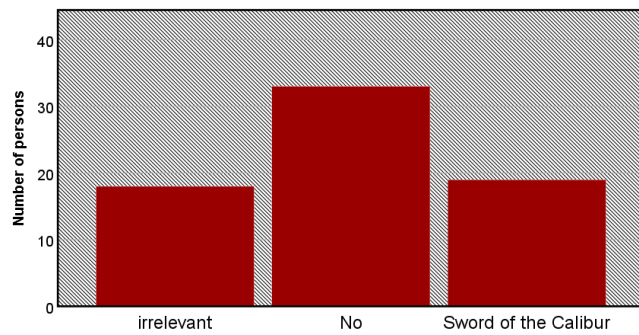
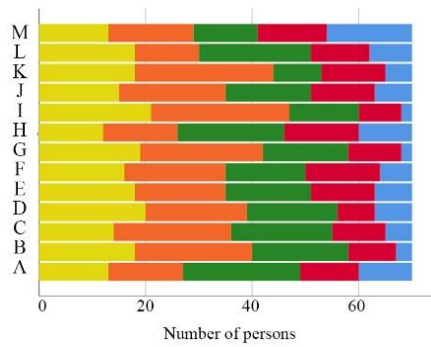
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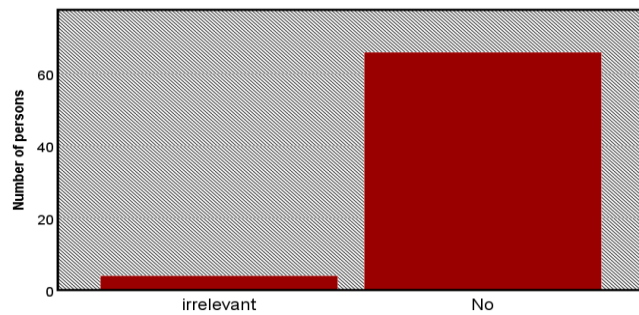
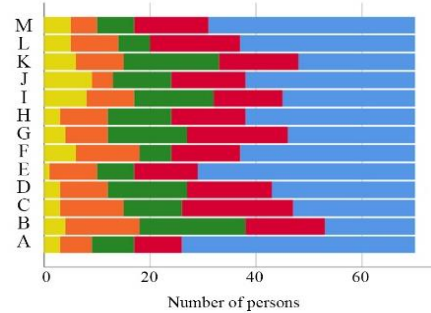


Fig 6. The Evaluated Designs and Sample Packaging (Source: Authors)

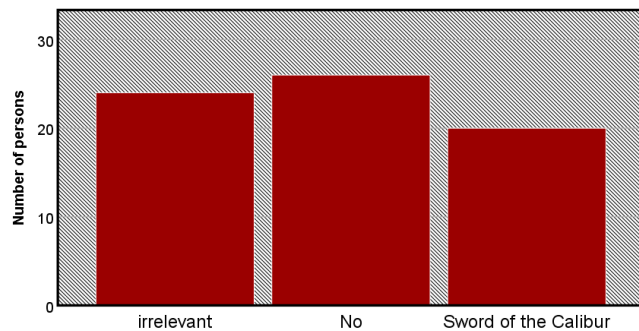
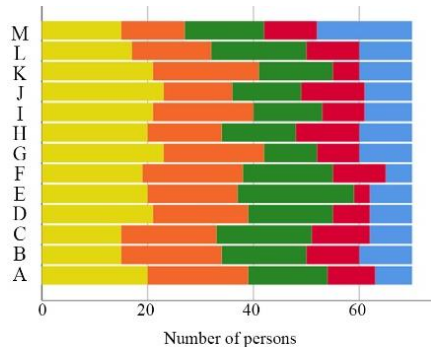
Concept 1



Existing Examples



Concept 2



Score : 1 2 3 4 5

A= Story telling B= Purchase Value C= Interaction D= Encouraging E= Entertaining
 F= Character G= Pleasure to use H= Having a message I= Satisfaction J= Admiration
 K= Desire to use L= Fascination M= Sense of Pride

Fig 7. Evaluation Results and a Comparison of Designs (Source: Authors)

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