



Globally Designed: a study of international Web user experience

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Abstract:

This study investigates the cultural differences of web interfaces. It compares how American-English speakers and Arabic-language speakers interpret web user interfaces. The goal is to explore how cultures affect users' understanding of web interfaces. Thirty users from two different cultures (the American and the Arabic cultures) participated in this study. The results show that culture influences how users understand or interpret web user interfaces, which in turn impacts the usability of global web interfaces.

1) - Introduction:

The world, nowadays, has become a small village. You can enjoy eating authentic Chinese food in the middle of New York City, and, you can smell the aroma of authentic Italian pizza in a small city in the Middle East. Our life now is more globalized in almost every aspect than ever before. What is the effect of globalization on web design? Has globalization affected our life in only certain parts, and left the other parts as is? Does every user enjoy a website in the same way across the globe?

What is the effect of user's culture on his web experience? Is it true that every website is usable to the extent that every user all over the globe can easily use it? Does culture really affect how a user understands and interprets web user interfaces?

Let's start with the research to discover whether culture affects how users understand web user interfaces or not. Fernandes (1995) stated that users' cultures do affect how they understand and interpret objects and symbols. He indicated that some of the objects that are

familiar to some are not familiar to different people from different cultures. For instance, the light bulb can mean an idea to the American users only; for example, when an American user sees the light bulb in a website, he thinks that it means “new idea” or “hint”. Fernandes also mentioned that graphical user interface designers must carefully study cultural restrictions, signs, and colors.

Icons are an integral part of the graphical user interface. Shirk & Smith (1994) indicated that, “because of the evidence that different users tend to have different cognitive style worldwide, computer interface styles should vary according to the users and to their tasks” (p.681). Also, Sharp, Rogers & Preece (2007) mentioned that “the most effective icons are those which have a direct mapping between what is being represented and how it is represented” (p.236). Therefore, icon universal meaning should be considered carefully when designing interfaces for global audience.

Another interesting aspect is how usability and culture have recently merged. Barber & Badre (1998) stated that “culturability is a term we use to emphasize the importance of the relationship between culture and usability in WWW design, but it can be expanded to apply to any software designed for international use” (p.2). They described the relationship between culture and usability and how they correlate and interfere in many parts of the WWW design. They continued by stating that “colors, spatial organization, fonts, shapes, icons and metaphors, geography, language, flags, sounds, and motion contribute to the design and the content of a web page” (p.2).

In addition, Barber & Badre (1998) discussed several comparisons of how colors can be understood differently between users from different cultures. For example, red means happiness in China, while it means death in Egypt, which is the total opposite meaning. Green means envy or eco-friendliness in the U.S., while in Latin it means hope. Green also means patriotism in Saudi Arabia, because green is the main color of the Saudi flag.

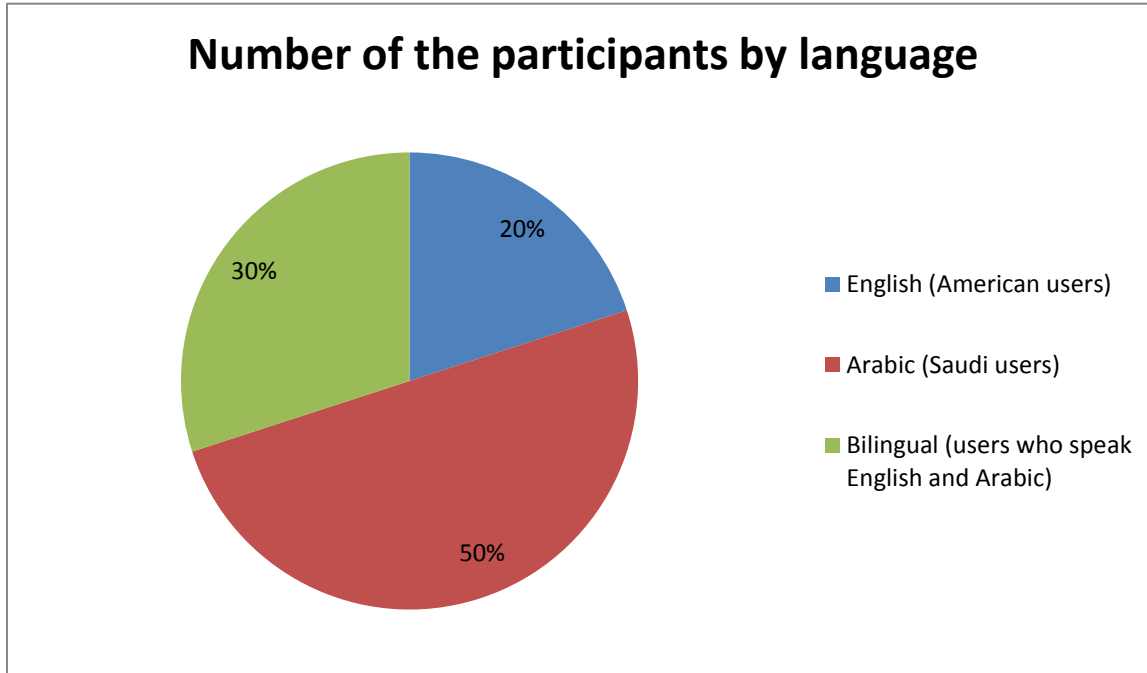
Moreover, Trillo (1999) indicated that culture is not being considered carefully enough in the “design and development of user interfaces for international markets” (p.1). He maintained that “localization efforts that merely translate the language or units of measures are increasingly being viewed as superficial. For example, authors such as De Galdo and Nielsen suggest two additional levels of focus: increasing the effectiveness of usability methods by modifying them for cultural appropriateness and designing interfaces in accordance to a cultural model of product usage” (p.1). It is clearly shown that many authors argue that culture is an integral factor in designing web user interfaces for international usage.

Based on the data from the research, this study will examine the cultural differences and perceptions of web interface among global users. It compares how the American users and the Arabic users understand web user interfaces differently. Furthermore, this study aims to discover whether cultural influence has an effect on users understanding of web user interfaces or not.

2) - Methodology:

A group of thirty users from both the U.S. and Saudi Arabia participated collectively in the survey for this study. The participants were chosen based on three categories: American users

who speak English only as a native language, bilingual Arabic users who speak English and Arabic, users who speak Arabic only as their native language.



The goal of the survey is to get certain responses about different components of WWW interface design. The participants were asked questions about the language, colors, icons, purpose of using the internet, calendar format, and level of expertise of the internet.

In addition, thirty participants did usability tasks on the Dell website. The English and the bilingual users (users who speak both English and Arabic) did the usability tasks on the English version of Dell website: <http://www.dell.com/>.

The other users who speak Arabic only did similar tasks on the Arabic version of the Dell website: <http://www1.euro.dell.com/ae/ar/gen/df.aspx?refid=df&s=gen>.

The Questions

The participants were asked a question about the purpose of using the internet. The participants were also asked a question to look at certain icons and explain their meanings.

Four icons were used: a yellow star, a light bulb, an informational “i”, and a compass.



In addition, the participants were asked four questions about four colors: yellow, white, blue and green. They were asked to describe what the four colors mean in their respective culture.

The participants were asked to report their opinions about the Dell website. In particular, they were asked about the color, design, and usability of the site.

Then, the American users were asked to find the “policy of cancelling an order.” The Arabic users were asked to complete a similar task and find the page where they can install drivers and software updates.

The American users were asked to find the price of the “Dell Inspiron 14R laptop.” The Arabic users were asked to do a similar task and find a type of a computer processor installed in “Dell Studio 15.”

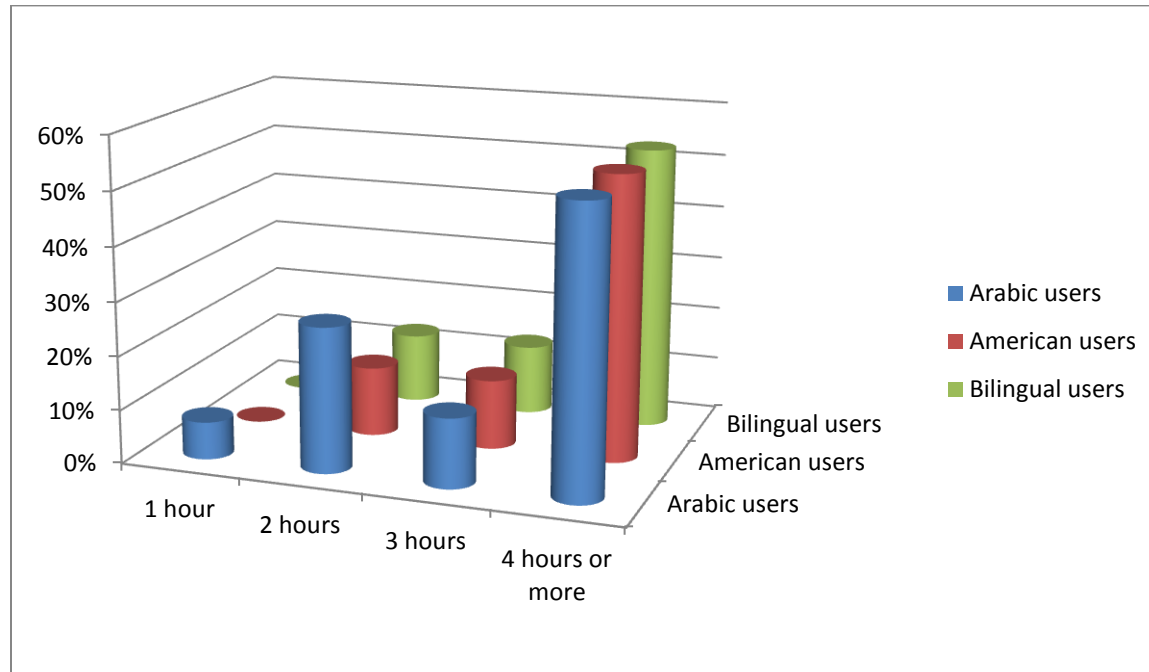
In the next step of the usability session, the American users were asked to find the price of a mobile device called “Dell Streak 5.”, and the Arabic users were asked to find the size of the “Dell inspiron 17R monitor.”

The American and the Arabic users were also asked to give their general impression about the usability of the Dell website.

Finally, the information extracted from the survey and the usability sessions were compared and analyzed to explore the cultural differences that can effect web interfaces perception.

3) - The results:

Twenty-two males and eight females took the survey. The age range was from 15 to 48 years old. 53% of the participants said that they spend 4 hours or more online daily.



The participants cited reading, social networking, chatting, doing work, and doing research, as their main goals when online. In fact, this was one of the major similarities between the American users and the Arabic users.

40% of the Arabic users said that they frequently use websites in a different language. They added that they often use certain English websites in order to learn the English language.

Moreover, 40% of the Arabic users said that they prefer using the Arabic calendar (Muharram-Dhu al-Hijjah) because using the English calendar can be confusing for them. The other 60% said that they generally prefer using the English calendar (January-December) because most of them work with international companies and are paid to use the English version.

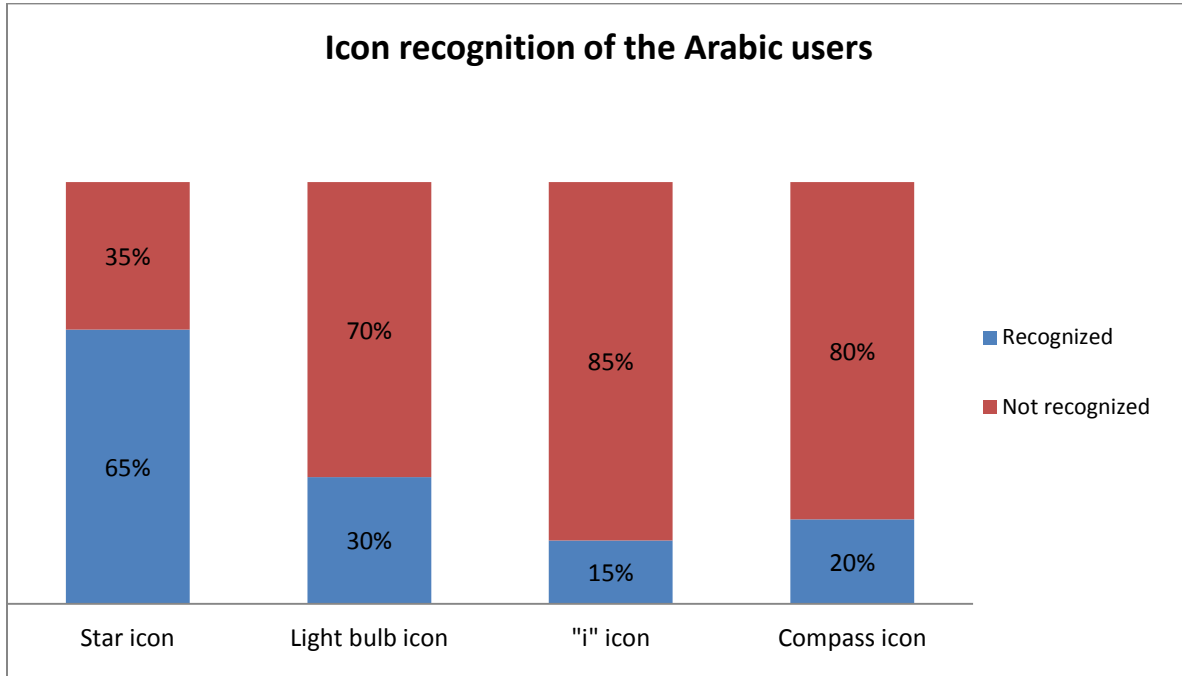
A) – The icons

100% of the American users recognized the star icon. They said that it means: favorite, rating, “well done”, or ranking. On the other hand, 65% of the Arabic users recognized the meaning of the star icon. The rest of the Arabic users said they had no idea about its meaning.

In addition, all of the American users recognized the meaning of the light bulb. They said that it is a symbol for a new idea. On the contrary, 70% of the Arabic users said that they did not know the meaning of the icon. The other 30% guessed that the icon could mean an idea, light, information, help, or warning.

On one hand, 70% of the American users said that “i” icon means information. The other 30% said that it means help, reward, wrong page, or an error. On the other hand, only 13% of the Arabic users recognized the “i” icon to mean “information”. They said that it could symbolize: warning, iTunes, invention, or internet.

Most of the American users guessed the meaning of the compass icon right away. They said that it means: Safari, navigation, browser, direction, or explorer. However, only three Arabic users guessed the meaning of the compass icon successfully. This means that more than 80% of the Arabic users did not recognize the meaning of the compass icon, even though it is being used in one of the most popular internet browsers: Safari.



B) - The colors

Most of the American users associated the color yellow with: happiness, caution, and friendship. However, most of the Arabic users associated the color yellow with: activity, lousiness, and poisonous materials.

Most of the American users associated the color white with: peace, purity, and cleanliness. Yet, the Arabic users associated the color white with: a new idea, silence, transparency, and spirituality. There were a few similarities when the American and the Arabic users described the white color, but it seems that the color can also have very different meanings within the two cultures.

Moreover, most of the American users said the blue color can mean: beauty, emotion, sadness, and freedom. On the contrary, most of the Arabic users associated the blue color

with: the sky, the sea, and power. The Arabic users always link the blue color with power and beauty.

The last color used in this survey was green. Most of the American users associated the color with: life, nature, eco-friendliness, and freshness. Most of the Arabic users associated the green color with: patriotism (most of the Arabic users are from Saudi Arabia, and the color of the Saudi Flag is green), peace, safety, heaven, and happiness.

C) – Websites translation

50% of the American users said that they prefer to use an English translated version of a website, if it is originally published in a different language. The other half said that they would prefer to use the original website with its native text, because the translation can be inaccurate.

Most of the Arabic users said that they prefer to use a website in its native language. They also said that even the website “Google Translate” does not always work well with translations into Arabic.

D) – The usability sessions

The majority of the American users liked the design and the colors of the Dell website. They said that it is simple, beautiful, and easy to navigate. They liked the design of the homepage very much.

However, 60% of the Arabic users did not appreciate the fact the Dell website switched between English and Arabic terminology. They said the translation in some parts is

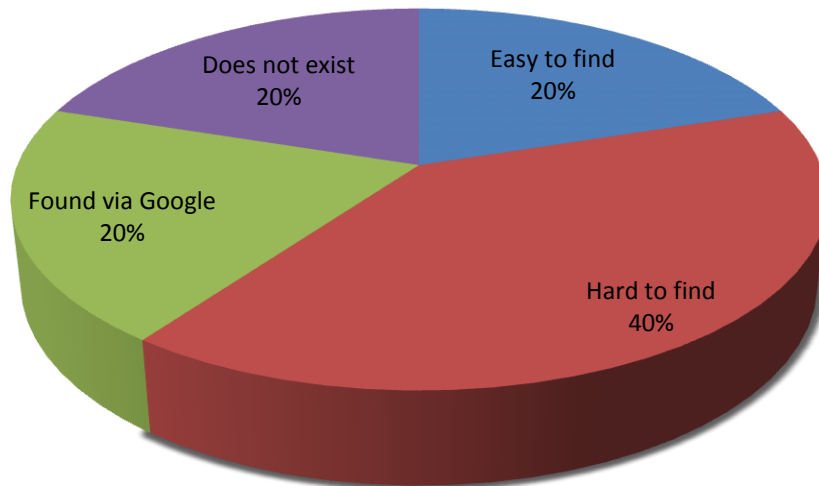
inaccurate, which makes it very difficult to use. They also said that the website is less than normal in design and colors. The other 40% liked the website and the colors. They said that it is simple and beautiful.

Most of the American users were able to find the “policy of cancelling an order” easily. Most of the Arabic users were able to find the page where they can install drivers and software updates successfully and said that it was easy to find.

The majority of the American users were able to find the correct price of the “Dell Inspiron 14R laptop” and they said that it was easy to locate. 30% of the Arabic users said found the type of the processor installed in “Dell Studio 15” easily. However, the other 60% found only partial information or did not find the correct information. Some of the users who were able to find it said that they used Google to find the type of the processor, which indicates that it was difficult to find the correct information on the Dell website itself. They said that it was hard to find because the information was written in English.

Some of the Arabic users could not find the correct information at all and claimed that they do not believe that the information exists on the website.

Computer processor information location (Arabic users)



The majority of the Americans found the price of the “Dell Streak 5” easily and they said that they did not have any problem navigating the site to find the price. However, the Arabic users had more trouble finding the size of the “Dell inspiron 17R monitor.” They were very confused about the unit of measurement used online. They did not know the difference between an inch and a centimeter, which frustrated them.

The majority of the American users said that the website is very good and is easy to navigate, while others said that the website could be redesigned to be much easier to navigate.

The majority Arabic users were not satisfied with the website. They said that the website needs an extensive makeover. They said that it was not easy to navigate at all.

4) - Discussion:

Culture affects how people understand and interpret the web user interface. There is strong evidence that website designers who design for international audience should consider the cultures' different needs in the design process. Careful consideration should be given to language, symbols, icons, and colors and how they can impact the usability of a website.

I do not believe that culture affects the reasons why people use the internet. It might sound obvious that people use the internet for the same reasons; however, it would be interesting to do more research about the reasons on why people from different cultural backgrounds use the internet.

It is clear that the American users recognized well the icons that I used in my survey, while the icons were hard to recognize for the Arabic users. This was one of most significant finding in this study. The use of icons can have a negative impact on the usability of any website when designing for an international audience. Therefore, leaving the icons off the design is a good idea, unless universally understood symbols are utilized.

Colors can be understood differently among different cultures, as was seen in the comparison between the American and the Middle Eastern people. Also, they can be understood differently when used in web design. For instance, the use of yellow may impact the usability in web design, depending on the audience of the website and their different perceptions of the hue.

I believe that blue is one the best colors that should be used when design for the Arabic users.

In fact, most of the famous and successful Arabic websites use blue in their design, such as mobily.com.sa. The green color can have a different meaning between the American and the Arabic cultures. The use of green can be tricky, especially when considering the Saudi users as a target audience who view the color with strong patriotic feelings.

Another area that is important to consider is unit of measure when delivering information to an international audience. In fact, some of the Arabic users did not know the difference between inches and centimeters, and mixed them up while answering the computer processor type question. This also applies to other unit measures, such as kilometers vs. miles, and so on. The designers should not assume that users will know the difference, and should provide alternative methods to calculate the measure using different unites.

Many designers assume that language translation is adequate to make the content of a website comprehensible and easy to use. However, there is strong evidence that translating the text with a machine without translating the visual components as well does not make the website understandable or easy to use. In fact, it only makes it worse and less accurate.

In conclusion, I acknowledge that there are certain limitations to this study. One of the major limitations is the lack of prior research studies on the topic. There are many reliable resources that examined the global interface design, but only few of them focused on the American and

the Arabic cultures specifically. The second major limitation is that I did this study as a part of my master's project over an academic semester of fourteen weeks. Therefore, there was a time limitation and deadlines with which I have to comply.

If anyone is interested in doing future research in this subject area, I would recommend applying this study to different cultures. For example, comparing the French culture or the German culture with the American culture and discovering whether there are cultural differences of web interface perception there or not.

In addition, examining different forms of languages, such as the Chinese or Japanese languages, can add different dimensions to this study. Given that Arabic is read horizontally from right to left, examining languages that are read in different directions, such as Japanese (read vertically), may also affect how the Japanese users understand the web user interfaces, and in turn affects the usability of a website.

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