

Review of Responsive Design Concept Based On Framework Materialize On The Website



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Abstract

Responsive web design is a website design that can adjust each size on each device. Based on the results of several respondents, 60% of respondents agreed that some websites were not able to adjust the display size on the web, 50% of respondents agreed that design affects the convenience factor, 58% of respondents agreed that the main content and functionality of websites that are difficult to access via mobile devices, 53% of respondents agreed that the appearance of a website that was not attractive had a bad effect on the comfort factor of the respondents, 50% of respondents also agreed that the website was not able to adjust the size on every mobile device. From the results of this review, it can be concluded that an unresponsive website greatly affects the inconvenience of users in accessing information through the website.

Keywords: responsive design, website, mobile, respondent, review

I. INTRODUCTION

At this time information technology is developing rapidly in various fields of life. The increasing use of online websites is also caused by a number of internet users. This is a new challenge for developers in various ways that improve the quality of a website that provides information that is fast, precise and easily accessible to all people and can be accessed by various platforms and various media.

This is supported by the development of mobile devices which are increasing every year, especially in the use of smartphones. According to the results of a survey by the Indonesian Internet Network Providers Association (APJII) in 2016, it was revealed that 63.1 million people or around 47.6% accessed smartphones and only 2.2 million people or around 1.7% accessed computers. This encourages developers to improve the quality of responsive or attractive websites. However, the difference in size for each device is a factor of inconvenience for users. Increasing use of devices requires developers to create responsive and attractive websites.

Responsive web design is a website design that can adjust every size on each device. This responsive design application is combined with flexible grids, javascript CSS media queries and HTML. The benefit of responsive design is a website that can adapt to the layout of device sizes of various sizes, fonts, images and other components without having to do horizontal scrolling.

Literature Review

a. Web

(Tabratas Tharom, Marta Dinata and Xerandy, in Bertha, 2001: 64), said "The web is a collection of documents that are scattered on internet machines. Usually this document is called (HTML page). Each page contains links to other pages on the internet. A web page that points to another page is called Hypertext. The string linking to another page is called a hyperlink.

b. Fixed Width Design

(Knight, K, 2009), said that "Fixed width design (FWD) is applied to websites with fixed website layouts that have a wrapper with a fixed width, and the components contained therein have a specified width with a certain percentage. The important thing is that the wrapper element is set immovable. No matter what screen resolution website visitors use, visitors will see the same website width as other visitors ".

c. Responsive Design

Noah Daniels (2004) states "Responsive design is a website development by displaying an elegant design with the appropriate size on each device displayed. With this responsive design, it only requires one website but can be accessed by various devices with different screen sizes, can provide ease of maintenance and only requires one domain address.

Based on the UIE article entitled "Device Experience & Responsive Design", explaining responsive design is a technique that can make the process of designing applications and websites for various types of devices easier. This is because by using a responsive device, it is possible for designers to be able to implement solutions of various screen resolutions, densities, and aspect ratios on many types of devices. Responsive design has the ability to be applied into the design of a website so that the site can be accessed via a smartphone, tablet, desktop, or smart TV without showing too big a difference in terms of usage.

From the two meanings above, it can be concluded that responsive design is a website development by displaying elegant designs with various device sizes to be able to implement solutions for various screen resolutions, densities and aspect ratios on types of devices that can be accessed via smartphones, tablets, desktop or smart TV.

d. Materialize

According to Anirudh Prabu and Aravind Shenoy (2016), stated "Materialize is a framework that is similar to Bootstrap and foundation which presents UI components. However, it has different functions because Bootstrap and Foundation are mobile based while Materialize follows Material Design which comes from Google.

e. CSS

According to Achmad Solichin (2013), "CSS or Cascading Style Sheet was first proposed by Hakon Wium Lie in 1994, then standardized by W3C. CSS provides a fairly easy and efficient way for programmers to determine the layout on web pages and beautify web pages with various elements and animations. Like HTML, versions of CSS are also evolving. The first version established by the W3C in December 1996 was CSS level 1, then in May 1998 it developed to CSS level 2, and in 2012 it was proposed CSS level 3. The version that is currently popular is CSS level 3 because it has many advantages compared to CSS. previous versions".

f. HTML

According to Achmad Solichin (2013), "HTML stands for Hypertext Markup Language. The first time HTML was developed by Tim Berners-Lee with the HTTP (Hypertext Transfer Protocol) protocol in 1989. HTML is also a web programming language that tells web browsers which to compile and present content on web pages".

g. Javascript

According to Achmad Solichin (2013) "Javascript was first developed by Netscape with the initial name LiveScript. The main function of Javascript is for the convenience of web functions. Javascript is more focused on processing data and presenting more attractive web components. Since the emergence of the concept of AJAX (Asynchronous Javascript and XML), Javascript has become increasingly popular, allowing interaction between the client and server to be more flexible.

h. JQuery

According to Aloysius Sigit W, (2011), "A query is a collection of ready-to-use Javascript code. The use of JQuery is superior to using Javascript, namely by simplifying the Javascript code by calling the functions provided by JQuery. Javascript itself is a scripting language that works on the browser side so that websites can be more interactive. JQuery was first released in 2006 by John Resig. JQuery has been used on world-class websites such as Google, Twitter, ESPN and others.

i. C# Programming

According to Shelly Cashman Vermaat (2016), "C # or read as C sharp is object-oriented programming developed by Anders Heljsberg who is the head at Microsoft and a great engineer. C # has also been accepted as the standard for XML-based web applications and services.

j. Media Queries

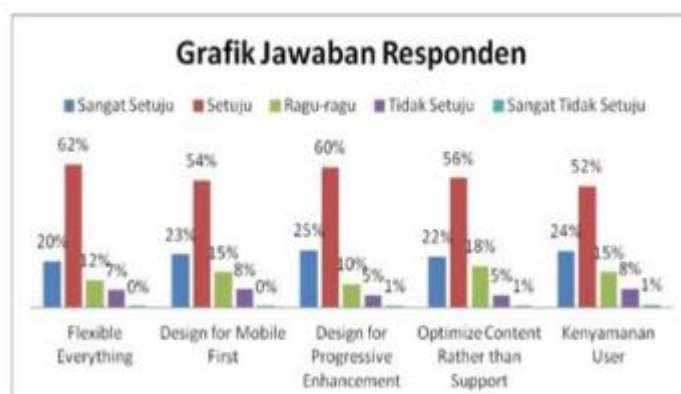
Media queries are a technique from CSS that can determine or adjust the appearance of each device based on its resolution. This is needed to determine the size of each font image at each device resolution which can make it easier for users to find info from the website effectively.

II. METODE

This study is based on quantitative method, which consists of data analysis based on statistical method. Our measurement or construct is derived from prior empirical research: Internet Addiction by Young et al (Young 2015). The construct was then modified and adjusted with condition in Indonesia. Final measurement model is in a five-point Likert-type scale ranging from “strongly disagree” to “strongly agree”. The question is then classified into several categories like “time”, “relationship”, “productivity” and “thought” based on deeply reading several prior research (Ashwini Veronica and Samuel 2016)(Buran Köse and Doğan 2019)(Şahin 2017). These classes then observed whether there is a significant relationship to social media and gadget addiction. All constructs of measurement are put on online form and spread out to selected audiences. In addition, additional information like age, sex, occupation, last education, and city is included in form information.

III. RESULT AND DISCUSSION

- 60% of respondents agree that some websites have not been able to adjust the display size on the web. Such as headers, footers, images and text fonts, which greatly affect the comfort of respondents.
- 50% of respondents agree that the design affects the comfort factor in reading text, images and menus.
- 58% of respondents agree that the main content and functionality of websites that are difficult to access via mobile devices greatly affect the convenience of respondents.
- 53% of respondents agree that an unattractive website display has a bad effect on the comfort factor of the respondents.
- 50% of respondents also agree that websites that have not been able to adjust the size of each mobile device affect the activity of the respondent when accessing the website.



Graphs 1. Respondents' answer graph

The results of the image above show that currently users who are accessing the website on a mobile device with an unfocused display or desktop version, user comfort will decrease when accessing the website.

- Provides convenience for users when accessing the website via mobile devices.
- Prevent horizontal scrolling when users access the web via mobile devices.
- Only users of one domain address, the website can be accessed on all mobile devices.
- Can adjust the size or appearance of the website on each device accessed.
- Ease of maintenance is an advantage for the owner or company.

IV. CONCLUSION

Based on the conclusions from the above review that:

1. Based on the results of several respondents stated, 60% of respondents agreed that some websites were not able to adjust the display size on the web, 50% of respondents agreed that design affects the convenience factor, 58% of respondents agreed that the main content and functionality of websites that are difficult to access via mobile devices , 53% of respondents agreed that the appearance of the website that is not attractive has a bad effect on the comfort factor of the respondents, 50% of respondents also agreed that the website has not been able to adjust the size on every mobile device.
2. Based on the results of the respondents above, it is stated that the inconvenience of users when accessing websites that have not been able to adjust the appearance of each device greatly affects the comfort of the users.
3. One of the advantages of responsive design is that it avoids horizontal scrolling when accessing the website via mobile devices and the size of the website which can adjust the display at each screen resolution.

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