

Is Mobile Layout more suitable to read ? A comparison between mobile and web page layouts

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Abstract: This study aims to and user attitude toward reading news via website and mobile application and to compare the difference of usability test of three functions including news-seeking, font adjusting and news reading. The results showed that there are significant differences on users' performances of news-seeking and font adjusting between two layouts but no difference on news reading. In conclusion, this paper provides suggestions to usability improvement for news reading with different technology applications.

Keywords: News reading, usability, layout

1. Introduction

Informal learning can be defined as "any activity involving the pursuit of understanding, knowledge or skill which occurs outside the curricula of educational institutions, or the courses or workshops offered by educational or social agencies." (Livingstone, 1999) News reading is informal learning (Schugurensky, 2000), which is common in daily life. With the development of network, the public not only read traditional printed newspaper, but also use online channel to receive news every day.

In recent years, mobile technology has been developing extremely fast, the report of Institute for Information Industry (2014) showed that users of mobile devices had reached 13.3 million; and nearly 60% of the population in Taiwan over the age of 12. Moreover, the penetration rate of tablet had reached to 25.4% (almost 5.3 millions users). Mobile devices bring changes to people's reading habit because of it can be always on, and wired anytime, and be carried anywhere (Saturnino, 2012). Because of mobility, the screen of mobile device is smaller than that of desktop computers, so the interface should be redesigned to fit the features. "United Daily News" is one of most famous newspaper brands which has its own news website and mobile application. Therefore, this study wants to take "United Daily News" as example to compare the behaviors and attitude between using mobile device and PC interface for news reading.

2. Literature Review

With the development of technology, more and more news went digitization to online media and mobile media. While today the computer remains the primary device for accessing digital news, the key underlying trend is the growth in access from multiple devices (Mitchell, & Page, 2014). However, it also brings new issue about usability of page layout. Usability is a software attribute usually associated with the "ease of use and to learn" of a given interactive system (Dumas, & Redish, 2000). The perceived relative advantage (especially content), utility, and ease of use of mobile news are positively related to its adoption (S. Chan-Olmsted, H. Rim, & A. Zerba, 2013). So it's critical to argue about the usability of interface design.

The evaluation of usability haven't have standard method (Naumann & Wechsung, 2008). Nielsen (1993) proposed learnability, efficiency, memorability, errors, satisfaction and task success

five characteristics to evaluate system usability. Whereas Tullis and Albert (2013) used task success, time-on-time, errors, efficiency and learnability five characteristics. Though a little difference between the two methods, it seems that in usability evaluation, Subjective and objective methods have to be used together.

As Flavián and Guerra (2006) had identified five motives for mobile news use: updating issues, specific information-seeking, searching for updated news, leisure-entertainment, and habitual use. Shim, You, Lee, and Go (2015) found that the information-seeking motive influenced users' employment of mobile news apps. Younger and older groups are considered "providing the layout choices (such as background, font)" as the most important function of reading. And the larger the font size is, the higher efficiency to complete the task (Ko, Mohapatra, Bailey, Sheedy, and Rempel, 2014). Therefore, news-seeking and font adjusting may be the important functions during digital news reading.

In summary, the aim of this study is to through news-seeking, font adjusting and news reading three functions to compare the usability and user attitude between news website and mobile application.

3. Method

This study adopts quasi-experimental designing, use convenience sampling and snowball sampling to invite 18 college students (half males and half females) to participate the user experiments. They were asked to use desktop computer (PC) and iPad to finish the task that include searching the assigned news, adjusting fonts and reading the news with the two different page layouts. During the task, Observation and interview were conducted to collect their evaluation of behaviors and attitudes.

In terms of data analysis, quantitative data use descriptive statistics and variance analysis by SPSS (Statistic Package of Social Sciences). Qualitative data of observation and interviews were analyzed by content analysis.

4. Results

This study has three parts of task, including searching assigned news, adjusting font and reading news. Through the analysis of the experiment results, some differences are found between two layouts. In terms of searching assigned news, the time for web page layout was averagely 311.7 sec, significantly longer than mobile application layout (183.8 sec). It means users perform better for mobile application layout. The results of interview showed 11(61.1%) participators are satisfied with the search ways of web-based layout, while 13(72.2%) participators are satisfied with the search ways of APP layout. The reason why users are unsatisfied with web page layout is unclear classification, while due to the vertical menu layout of APP, the menu is too long and hard to compare each category.

In terms of adjusting font and reading news, Web page layout and App layout also have some differences. The ways to adjust font is different. In web page layout, the buttons to adjust font is on the top of article, there are four icons to adjust font directly. In App layout, the font icon is hidden in the tools menu at bottom right corner. Users have to do three steps to finish font adjusting, the steps are clicking the tools menu icon, clicking the font icon, using four icons to adjust font directly. The results show that participators spent 31.78 sec averagely to find icon and adjust the font to the maximum in web page layout, and spent 23 sec averagely in App layout, which means participators performed better in App layout. After finding the font icon, there are no significant differences in adjust font size.

In the aspect of news reading, results showed that there are no differences between two layouts. Nearly 70% participators were satisfied with reading news. But the reasons they feel unsatisfied were different. Summarize the advices of participators, web page layout text isn't tidy enough, kerning isn't enough. The device size limits reading on App layout.

5. Discussion and Conclusion

This study compared the behavior and attitude through three parts of task, which are searching assigned news, adjusting font and reading news. The results have showed in the previous chapter. Though the performances of news reading have no obvious difference between two layouts, the performances of news-seeking and font adjusting have significant difference. Similar to the research results in 2005, reading speed and comprehension were not affected by layout. But if using enhanced layout to read, users were more satisfied (Chaparro, Baker, Shaikh, Hull, & Brady, 2004). College students are a generation who are familiar with smart products, so they may be easy to grasp the usage of new smart products or new applications. And new technology such as mobile systems indeed brings advantages to younger group. And the usability of web and application is important for improving users' satisfaction.

According to usability evaluation, here some suggestions were made to help system usability improvement. First, it needs clear menu categories for news-seeking. Second, in mobile application layout, menu shouldn't be long, maybe can adopt draw-out type menu. The last is putting font icons at the obvious area fixedly.

This research subjects are younger group, maybe elders will show different results. Future study can compare the behavior and attitude between younger group and elders.

References

- Chan-Olmsted, S., Rim, H., & Zerba, A. (2013). Mobile news adoption among young adults examining the roles of perceptions, news consumption, and media usage. *Journalism & Mass Communication Quarterly*, 90, 126-147.
- Chaparro, B., Baker, J. R., Shaikh, A. D., Hull, S., & Brady, L. (2004). Reading online text: A comparison of four whitespace layouts. *Usability News*, 6(2), 1-7.
- Dumas, J. S., & Redish J.C. (2000). A Practical Guide to Usability Testing. Intl. Specialized Book Service Inc.
- Flavián, C., & Guerra, R. (2006). The role of readers' motivations in the choice of digital versus traditional newspapers. *Journal of Targeting, Measurement and Analysis for Marketing*, 14 (4), 325-335.
- Institute for Information Industry (2009). 2009 Consumer Survey eBook reader application status, preferences and future needs. Retrieved from: <http://www.iii.org.tw/m/ICT-more.aspx?id=32>
- Institute for Information Industry (2014). Institute for Information Industry FIND: Consumer behavior survey in the first half of 2014. Retrieved from: <http://www.find.org.tw/find/home.aspx?page=many&id=387>
- Ko, P., Mohapatra, A., Bailey, I. L., Sheedy, J., & Rempel, D. M. (2014). Effect of Font Size and Glare on Computer Tasks in Young and Older Adults. *Optometry & Vision Science*, 91, 682-689.
- Livingstone, D. (1999). Exploring the icebergs of adult learning: Findings of the first Canadian survey of informal learning practices. *CJSAE* 13 (2), 49-72.
- Mitchell, A., & Page, D. (2014). Key indicators in media and news 2014. Retrieved from <http://www.journalism.org/files/2014/03/Key-Indicators-in-Media-and-News-2014.pdf>
- Saturnino, J. (2012). Implementing mobile learning. Paper presented at the ASTD ICE 2012 W106, Denver, CO.
- Schugurensky, D. (2000). The forms of informal learning: Towards a conceptualization of the field. Retrieved from: <https://tspace.library.utoronto.ca/handle/1807/2733>
- Shim, H., You, K. H., Lee, J. K., & Go, E. (2015). Why do people access news with mobile devices? Exploring the role of suitability perception and motives on mobile news use. *Telematics and Informatics*, 32(1), 108-117.