

A Review on Design Elements of Design Guidelines for Mobile Applications for the Creative Industry

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Abstract

The development of mobile applications in the creative industry sector shows a very positive increase in the form of digital product production in keeping with current developments in the world of technology. In developing these mobile applications, it is necessary to look at the use of design principles in being a guide in development. The use of design principles in the development of mobile applications helps developers in developing quality mobile applications and achieve a positive level of usability from the users. To determine the design elements of design guidelines for mobile applications for the creative industry, a content analysis of the current literature was undertaken. This review was conducted on the existing design principles. A total of five existing design principles used in mobile application development from the literature were included in the review. This review shows that the use of cultural design elements in the development of mobile applications is less discussed. The results suggest that the usefulness of this cultural design element should be used in the development of mobile applications in the creative industry sector.

Keywords: mobile applications, creative industry, design principles, cultural design elements.

INTRODUCTION

The development of the world of technology today has expanded very widely. This development has affected various industry sectors, including the creative industry (Benckendorff et al., 2014). This development can be seen specifically in information and communication technology which has led to the very widespread use of smartphones among the world community today (Wahab et al., 2017). The widespread use of smartphones nowadays is due to the communication and information needs that can be used and met by smartphones.

The use of smartphones today, they are largely spent on mobile applications. According to Buildfire (2021), mobile apps represent 88 percent of today's smartphone usage. In 2019, 204 billion apps were downloaded, an increase of 6% over the previous year (Statista, 2020). Looking at the increasing use of mobile applications in smartphones nowadays, the creative industry needs of the mobile applications needed for development should be seen from the point of view of its construction so as not to miss important aspects in the creative industry cultural aspects (DIKN, 2010). In keeping this aspect to remain relevant for use in today's technological age, the use of design guidelines used in mobile application development needs to contain cultural design elements.

BACKGROUND

The phrase "creative industry" is used differently in different countries. The creative industry, according to UNESCO, combines the production, creation, and commercialization of intangible and cultural products. In the Malaysian context, the Creative Industry is defined as "the mobilization and production of individual or group abilities and talents based on creativity, innovation, and technology that leads to high sources of economic results and income for the country by emphasizing aspects of intellectual property and copyright in line with culture, and the noble values of racial diversity in Malaysia," (DIKN, 2010: 4).

This period of all-around technological growth has compelled society to advance to achieve personal success through the use of innovative technology. The creative industry, like the world of technology, has gone through a transformation from traditional to digital. As the world becomes more technologically advanced, the creative industry has been driven to introduce digital media as a new platform for the creative industry (Geng & Zhou, 2015; DIKN, 2010). Mobile applications are one of the digital media. For example, South Korea uses existing mobile application technologies to promote its innovative items while also promoting its culture (Kim, 2013; Jin, 2006). Another example is Indonesia, which uses Augmented Reality technology to promote traditional delicacies using smartphone applications (Weking & Santoso, 2020).

In developing mobile applications as a product in the creative industry in digital media platforms, it is necessary to look at the design principles used as design guidelines that meet the needs of users without reducing the important aspect in the creative industry that is the aspect of cultural values. The design principles serve as a guide in providing a user interface that achieves the usability given to the user (Nacheva, 2015).

METHODOLOGY

The process for doing the content analysis is described in this section. This section describes how the literature was gathered, which studies have been deemed appropriate, and in the context of this study, how they were reviewed.

A. Unitizing

The first step in the content analysis used in this study was to identify the desired research topic and to determine the appropriate content medium to be used in the search. In this review, the topic of the study has been determined to identify the design elements of design guidelines for mobile applications development. In identifying the design elements of design guidelines, the study used the existing design principles as the content medium.

B. Sampling

The second step in this content analysis was to make a sampling of the existing design principles as the appropriate content medium used, by looking at the design elements used in the design principles. Samplings in this review study involved five types of design principles available, namely: (i) CADG (Ariffin & Dyson, 2015); (ii) Don Norman (Norman, 2013); (iii) ISO9241-11: 2018 (International Organization for Standardization, 2018); (iv) 10 general principles of Jakob Nielsen (Nielsen, 2005); (v) Shneiderman's eight golden rules (Shneiderman, 2004).

C. Recording/ Coding

In the third step of this content analysis, the review was conducted by making comparison between the design principles. Results from this step showed that each design principle has its own design elements, but there were design elements shared among them that were also used on the same thing, for example, the design elements used by Don Norman and Jakob Nielsen's design principles were similar. The 17 design elements were the result of the five design principles.

D. Reducing Data

The final step in this content analysis was to evaluate each design element used in the design principles. The results of the evaluation showed that each design principle indicates the need for the use of its own design elements. However, the use of design elements from each design principle used in this study showed that some of them used the same design elements, which showed that the use of design elements is important in design principles, and thus, design elements should become part of design guidelines in the development of mobile applications.

RESULT

After identifying research topics and content medium by looking at the design elements of design guidelines for mobile applications, there were five design principles commonly used were found. The results of these five; design principles also showed that there were 17 design elements. Each design principle has different design elements used. The comparison for each design element used in the design principles is shown in Table 1.

Table 1: Comparison of design elements from design principles

Element	CADG	Don Norman	ISO 9241-11 2018	Jakob Nielsen's	Shneiderman
Accessibility	✓				
Affordance		✓		✓	
Consistency	✓	✓		✓	✓
Constraints	✓	✓		✓	
Effectiveness			✓		
Efficiency	✓		✓	✓	
Error Handling				✓	✓
Error Prevention	✓			✓	
Feedback		✓			✓
Local Culture	✓				
Mapping	✓	✓		✓	✓
Match Between System and The Real World				✓	
Permit Easy Reversal of Actions					✓
Satisfaction			✓		
Shortcuts					✓
User Control and Freedom				✓	✓
Visibility		✓		✓	✓

CONCLUSION

In conclusion, the review using content analysis was conducted to identify the design elements of the design guidelines in the development of mobile application design that meet the needs of the creative industry. This review identified five relevant and current design principles, by looking at the design elements used in mobile application development for the creative industry. This review revealed the use of cultural design elements in existing design principles. However, current discussions on design elements for mobile application development for the creative industry were still lacking. Thus, studies related to the needs of cultural design elements need to be done to meet the needs of the creative industry in making cultural elements as the main basis in mobile application development.

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