

DESIGN COURSE FEATURE ON E-COMMERCE APPLICATION

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Abstract

The development of information technology makes it easier for users to get information. One way to get information is to use internet facilities. E-commerce is a web platform to provide information on products owned by sellers and consumers can see the desired product and buy it online. The development of e-commerce business or online buying and selling in Indonesia has increased drastically since the last few years. This is because Indonesia is one of the countries with the largest internet users in the world. MSME business actors in the field online printing do not yet have a place to accommodate their business so that they can be promoted to the public and prospective consumers. In general, the problems faced by each MSME are not much different. MSME business actors have difficulty marketing their products to consumers. So that a solution is given by creating an e-commerce application that can accommodate MSMEs to market their products. In addition to designing e-commerce applications, we also create learning features (courses) on this web application. The goal is that MSME actors in addition to marketing their products can also be provided with learning modules to be able to improve the marketing of MSME products. Course design using a user experience questionnaire (UEQ). The step taken is by conducting a literature study. Next, analyze the characteristics of the application usage. Then analyze user needs to create features needed in course design. After that, the designing a prototype. Then do the testing with the UEQ test. After completing the testing, the solution design is carried out in order to produce a better application. In usability testing by measuring satisfaction level is in the level of 73%. While testing with a user experience questionnaire, the value of the application is below average. the pragmatic quality level with a mean level of 0.825, the hedonic quality level with a mean level of 0.7 and overall comparison to benchmark is below average. The test results become the basis for improving the solution design to produce a better product.

Keywords: course, e-commerce, MSME, UEQ

1 INTRODUCTION

MSMEs are one of the important sectors in the growth and development of the Indonesian economy . This is because the MSME sector can absorb various workers and can reduce level unemployment. MSMEs can change the economy by creating fields work especially for the unemployed and later aims to advance the economy and improve people's living standards. By because that the more the MSMEs that develop, the greater the existing economic growth.

Principal Economist Payment System Policy Department of Bank Indonesia Agung Bayu Purwoko stated that the value of e-commerce transactions increased because Indonesia has 338.2 million mobile customers, 175.4 million internet users, and 160 million active social media users. Bank Indonesia data states that e-commerce transactions in August 2020 rose to 140 million compared to last year which reached 80 million transactions and August 2018, namely 40 million transactions. Not only transactions in e-commerce, digital banking transactions have increased especially for mobile banking transactions which in August 2020 reached 12 million transactions, an increase compared to August 2019 of 8 million transactions.

Research conducted by Rahmat Fadli Istanto (2013) With the implementation of the Mobile Commerce Application it can assist sellers in processing goods ordering data, customer data, and confirmation of delivery of goods carried out by Muslihudin (2017) Business-to-consumer (B2C) system in its delivery serves as a database system and means of transactions via the internet that utilize web technology. Research conducted by Ananto Widodo and Suharnawi which discussed the creation of an E-Commerce application for selling web-based goods on CV. Laboindo Intimedika Semarang uses the Web Engineering method. The end result of this research is the creation of an E-Commerce application to increase sales, as well as facilitate the buying and selling of goods. The existence of this digital economy makes it easy for people to buy and sell without having to meet in person and to maintain security during the current pandemic. In addition, the strategy that can be carried out is to innovate existing products according to the needs and desires of current consumers (Narto & HM, 2020).

MSMEs really need a change with the existence of digital marketing. Digital Marketing is marketing using electronic media or the internet. Marketplace activities cover many things, to differentiate E-marketplaces are divided into 4 parts, namely: (Kasmi, 2017) B2B (Business To Business), 1) where the two companies conduct business transactions in run its business; 2) B2C (Business To Consumer), this definition means that e-marketplace transactions are transactions where buyers are individual consumers; 3) C2C (Consumer To Consumer), here consumers sell directly to each other through electronic advertisements or customer sites; 4) C2B (Consumer To Business), in this category individuals sell goods or services to companies.

There are lots of facilities in selling online, for example through a marketplace, e-commerce or online shop. The three online sales media are different. Online shop is a marketing media that sells personal products that are usually offered on social media such as Instagram, Facebook, TikTok and so on. E-commerce is usually a website or application that sells personal brands. While the marketplace is an application or website that accommodates various products from many sellers (dewaweb, 2021). Marketplace is currently one of the most popular online marketing places.

Based on the above problems, it is necessary to design a user experience regarding online marketing learning, especially in the use of various kinds of marketplaces. The method used in this research is User Centered Design. User Centered Design is a method in developing interactive systems that focus on humans and users. This method is used to help solve problems in designing solutions for marketplace learning applications. In designing the application, ten end

users and two experts will be interviewed. The use of this user-focused method is carried out so that it can match what users want, especially MSMEs and later can help MSME users who are still stuttering about technology to be able to easily use MSMEs by providing interesting steps and also details in various kinds of marketplace uses.

Based on research on designing user experience marketplace learning during a pandemic, there were several similar studies, namely a journal entitled "UI/UX Design using the UCD (User-Centered Design) approach on the Thriftdoor website" which explains the use of the User Centered Design method in its design. This journal also discusses changes in new trends, namely traditional selling which is replaced by electronic trading. This electronic trade will change people's lifestyles to be more modern (Setiaji, 2020).

User experience is the interaction that users make with an application. This User Experience is one of the things that is seen in knowing how comfortable users are in using existing products. These products can be in the form of applications, websites, services and so on. If the features in the application are good enough but user satisfaction is poor, then it is considered that the user experience in the application is bad. User experience value can be achieved by looking at various gals starting from graphic and interface design, marketing, as well as good science design so that the user experience value is good. However, besides usability, the user experience also has a method which according to Peter Morville is seven important aspects that influence the user experience which are explained using Honeycomb with seven aspects (Morville, 2004).

2 METHODOLOGY

The design of this application has several stages. These stages use the user centered design method which can be seen in Figure 2.1

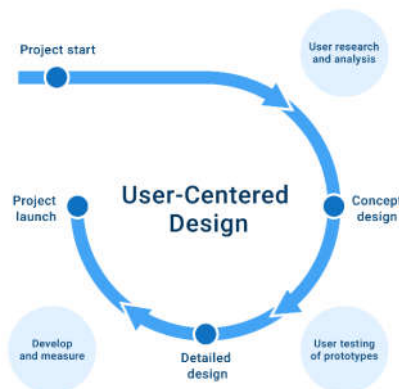


Figure 2.1 Diagram flow Study

This study uses the User-Centered Design (UCD) method which is centered on the user by creating a marketplace sales site and also adding course features on the web. This method consists of five stages of design. The first stage is planning the UCD process to meet user desires, followed by the second stage, namely determining the context of use by identifying the users involved. At this stage, determining the needs of users and organizations, then identifying user needs and analyzing tasks from the baraprinting.net marketplace information site. The third stage by designing the solution changes the requirements into a blueprint system consisting of layout design and user interface mock-up design. The last stage is to evaluate the proposed solution by calculating the usability level.

2.1 User-Centered Design Process

This study uses an implementative design type which will produce a solution design in the form of a design starting from analysis to high-fidelity prototype in accordance with the existing problems, namely learning design. marketplace . Method in study this will involve element user experience so that it uses the user centered design method in the application design process. Evaluation of this product will later calculate the level of usability .

2.2 Analysis Context Use

Usage context analysis is an analysis stage to determine the characteristics of stakeholders and users. This usage context analysis is carried out by conducting interviews with user and also stakeholders. Analysis of this context of use will result in a data which later used for reference in carrying out the next stage in the research. The results of this analysis are in the form of interviews that used in making persona, user journey maps . Analysis is also done Needs Users by analyzing what the needs of users and what users want. This analysis was carried out after conducting interviews with users of the marketplace learning application. What is done to find out the content needed by users can be analyzed using User journey maps which contain information about what just which has skipped user, identification duty and also destination as well as to do identification system.

2.3 Manufacture Design Solution

At the stage of making the solution design for the learning design of the marketplace application , it involves several things that involve stakeholders in creating the content in it. The design of

this solution is in the form of a storyboard, architecture information, user flow, wireframe and screen flow, mockup, and prototype

2.4 Evaluation Design Solution

At this stage an evaluation of the existing solution design is carried out. This evaluation is carried out by testing what deficiencies exist in designing marketplace learning applications for MSMEs. Test which conducted this used by testing the three aspects of effectiveness, efficiency, and user satisfaction (ISO 9241-210, 2010). This test was carried out by five prospective users who would later use the marketplace learning application for MSMEs.

3 FINDINGS AND DISCUSSION

3.1.1 Identification Characteristics User

At this stage, several stages are carried out, namely the creation of user personas and also Empathy Maps. This stage aims to find out in detail what users need for marketplace learning applications with users, namely MSME entrepreneurs who are new to using the marketplace. Because of this, a simple and easy-to-use application is needed in learning so that users can easily use the application.

This application is used by users, the majority of whom are MSME entrepreneurs and people who want to become MSME entrepreneurs. they should get an application that is simple and not too complicated. In interviews, several users have tried learning applications such as skill academy and coursera. This marketplace learning application will be similar to that application.

3.1.2. Analysis and Specification User

After identifying users from interviews and generating after making charms and empathy maps. Then further, specifications are made regarding the terms and needs required by the user. These requirements must be met for the solution design process. In addition, other information is needed for the design of the solution design.

The needs that must be met are summarized in a content requirement. The content needs are: 1) there is material about learning various marketplaces that are used to find out how to use and market products; 2) the existence of a discussion forum in which it can raise the complaints they experience and can also make comments on the complaints experienced by others; 3) there are recommendations for a suitable marketplace for the product category to be sold; 4) there is a continuing learning feature that can continue reading unfinished material; 5) there is a store of the

most preferred material and can also store the material you want to read; 6) there is popular content, namely content that is most often searched for in the application; 7) there are chats with experts in various marketplace fields and also digital marketing

3.1.3 Design Solution

3.1.3.1 Storyboards

Storyboard is a series of stories depicted visually so that it can make it easier for users to understand the message or meaning in it. The marketplace learning application is an application in which there are various kinds of learning services in using the marketplace to how to trade in the marketplace. So that the making of the storyboard refers to the data that has been obtained from various MSMEs that have been interviewed.

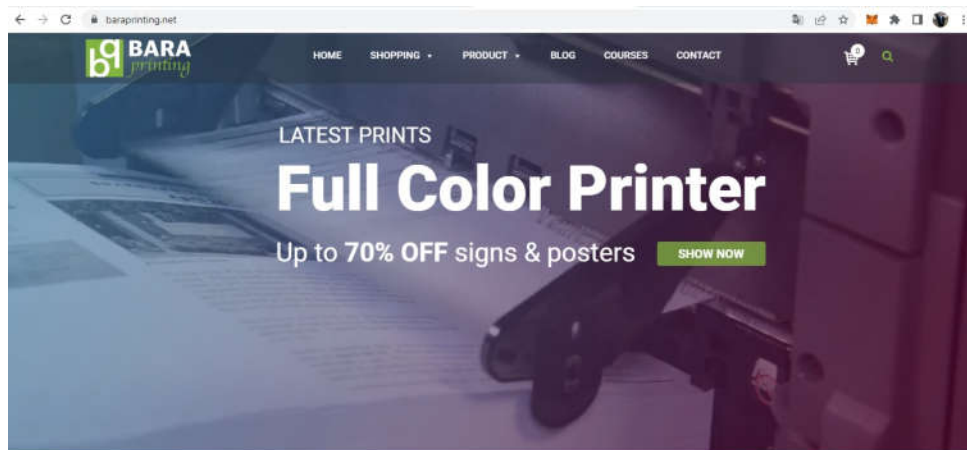


Figure 3.1 Home View

3.1.3.2 Information Architecture

Information Architecture is a chart that is used to make it easier for users to find out what is in an application. Apart from that, with the Information Architecture, users can easily get information which is in the application

3.1.3.3 Wireframes

Wireframes is something framework basic in applications or websites. Wireframe can also be referred to as a blueprint or a detailed description of a plan that describes the form and core functions that are needed there is in a screen page application (Hadwiger, F., Hamm, B., Vitols, K., & Wilke, P. (2017).

Screenflow is a flow of how to design solutions that will interact with users. Screenflow will consist of pages that are in the application and interact with one another to become a certain process in the marketplace learning application. On Screenflow into the application which is

marked by the presence of two onboarding screens which will show a little about the application. After that, at the last onboarding, the user can press the login button and later the user will be referred to the account login page.

3.1.3.4 Mockups

A mockup is a design with higher precision with information in the form of images, colors, typography, and content that can no longer be in lorem ipsum form. This mockup provides a visual effect like a real form in the application with a visual design that has been applied to a real product so that it is like a finished product. Figure 3.2 is a mockup of the homepage that the user will see after the user has successfully logged in or registered.

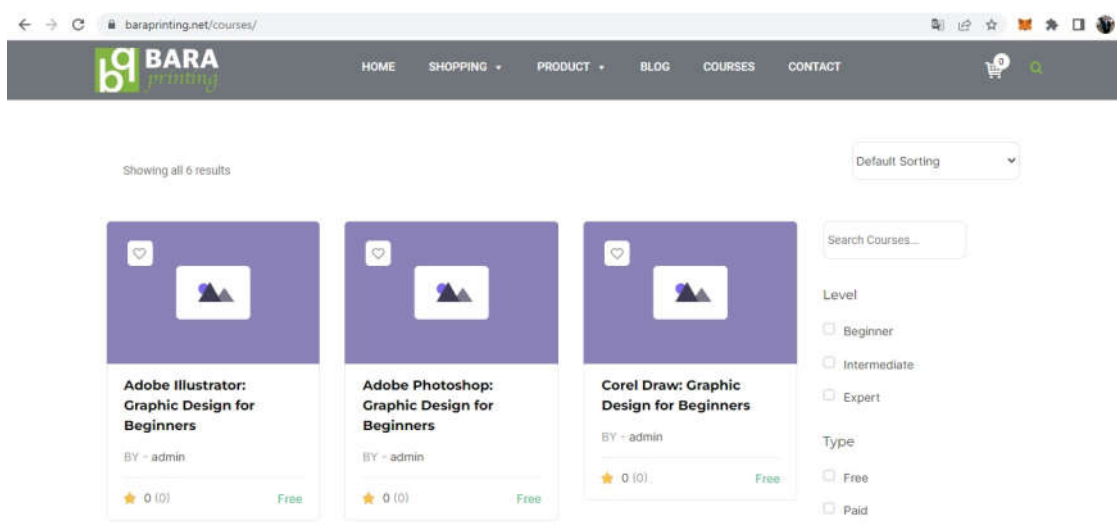


Figure 3.2 Mockup Course

3.1.4. Testing and Evaluation

The tests carried out in testing this marketplace learning application are by using the usability testing method. The usability testing method will later be used as a measurement of whether the design in the application is useful or not

3.1.4.1. UEQ (User Experience Questionnaires)

Data

This data was obtained from 10 respondents who are MSME business owners.

Table 1 Data

No	Items							
	1	2	3	4	5	6	7	8
1	1	6	4	5	3	4	3	5
2	5	5	4	5	2	3	4	5
3	6	3	2	5	5	6	7	4
4	5	6	6	4	4	6	6	4
5	4	4	4	5	5	5	4	5
6	6	4	4	4	6	6	7	7
7	6	6	6	4	3	4	4	3
8	7	6	4	5	5	3	5	4
9	5	6	6	5	4	6	4	5
10	6	5	5	4	6	6	5	5

Confidence Interval

Table 2 Confidence Intervals per Item

Confidence interval (p=0.05) per item						
Items	Means	Std. Dev.	N	Confidence	Confidence interval	
1	1,100	1,663	10	1.031	0.069	2,131
2	1,100	1,101	10	0.682	0.418	1,782
3	0.500	1,269	10	0.787	-0.287	1,287
4	0.600	0.516	10	0.320	0.280	0.920
5	0.300	1.337	10	0.829	-0.529	1,129
6	0.900	1,287	10	0.797	0.103	1,697
7	0.900	1.370	10	0.849	0.051	1,749
8	0.700	1.059	10	0.657	0.043	1.357

Tabel3Confidence Interval per Scale

Confidence intervals (p=0.05) per scale						
Scales	Means	Std. Dev.	N	Confidence	Confidence interval	
Pragmatic Quality	0.825	0.613	10	0.380	0.445	1,205
Hedonic Quality	0.700	0.978	10	0.606	0.094	1.306
Overall	0.763	0.515	10	0.319	0.443	1.082

Benchmark

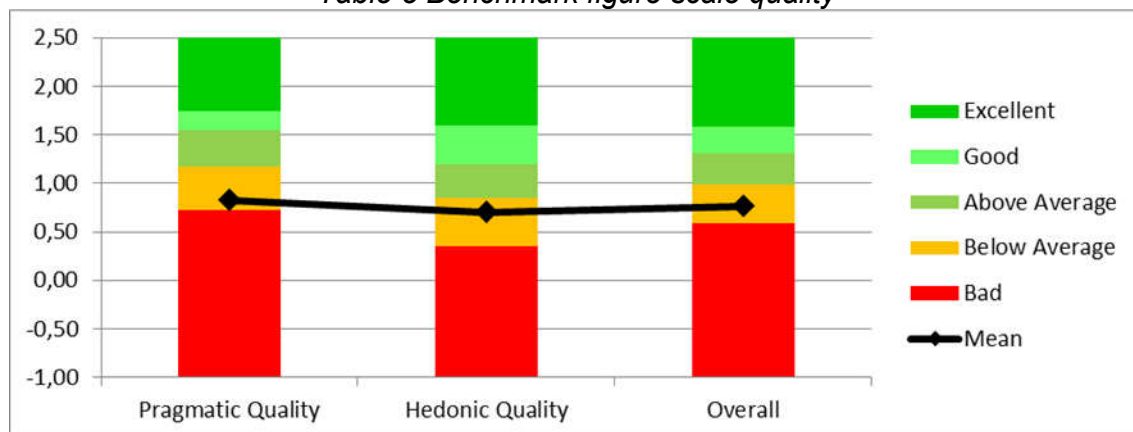
The measured scale means are set in relation to existing values from a benchmark data set.

The table shows that the results of data processing using UEQ indicate that the application is below average. Judging from the level of pragmatic quality with a mean level of 0.825, the level of hedonic quality with a mean level of 0.7 and overall comparison to benchmark is below average.

Table 4 Benchmark figure scale

Scales	Means	Comparisson to benchmarks	Interpretation
Pragmatic Quality	0.825	Below average	50% of results better, 25% of results worse
Hedonic Quality	0.7	Below Average	50% of results better, 25% of results worse
Overall	0.76	Below Average	50% of results better, 25% of results worse

Table 5 Benchmark figure scale quality



3.1.4.2. Test Usability Aspect Satisfaction

Satisfaction testing is a test that calculates the level of user satisfaction in using the design of learning applications marketplaces. Aspect this calculated by filling out the questionnaire SUS (System Usability Scale) which has 10 questions with a scale of 1 to 5. The questions are arranged into positive and then negative questions. After getting the SUS results, the next step is to do calculations based on the data that has been obtained. Calculation Satisfaction with SUS value which used. Results calculation it generates aspect satisfaction as big 73 % which is still in level B, good and included in the acceptable category. The calculation of the satisfaction aspect can be seen in Table 6

Table 6 Calculation Score SUS Aspect Satisfaction

No	Assessment Aspect	Respondent									
		1	2	3	4	5	6	7	8	9	10
1	I will use this system again	3	3	4	3	3	3	3	2	3	3
2	This system is complicated to use	3	3	0	4	3	3	3	0	4	3
3	This system is easy to use	3	3	3	3	3	3	3	3	3	3
4	I find this system quite confusing	3	3	4	4	3	3	3	4	4	3
5	I think the features in this system are working properly	3	3	4	5	3	3	4	4	3	3
6	I need someone else's help to use this system	2	4	3	3	4	2	3	2	3	4

7	I feel other people can easily use this app	3	3	4	3	3	2	3	3	3	2
8	I feel there are a lot of inconsistencies in this system	3	3	3	2	2	3	3	4	4	4
9	I feel there are no obstacles in using this system	3	3	3	3	3	2	3	3	3	3
10	I need to adapt in using this system	2	2	2	2	1	1	2	2	3	1
Total Score		28	30	30	32	28	25	30	27	33	29
Score x 2.5		70	75	75	80	70	63	75	68	83	73
Average		73									

3.2 Discussion

After carrying out usability testing and also UEQ, users will be asked questions regarding opinions and suggestions regarding the application design that was made. The existing opinions and suggestions are used to make improvements regarding the design solutions that have been made. In addition, the repair or origin of the problem is also obtained from the usability testing analysis. The list of recommendations can be seen in table 6.7

Table 7 List of Recommendation Repair

No	Origin Problem	Details Problem	Solution Repair
1	The Home page does not show the learning course menu	there is no sign that distinguishes the learning menu	Added a different menu icon

2	There is no discussion forum with fellow students and material providers	there are no chat rooms to hold discussions with fellow users and teachers	added a discussion forum in the application
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4 CONCLUSION

Based on study which has conducted Regarding the user experience design of marketplace learning applications, the first conclusion can be drawn from the analysis of user needs in the Design of Marketplace Learning Applications by interviewing business users. The results of interviews with these users produce some of the desired features in designing this application. The features desired by users are comparison features of various marketplaces, material features accompanied by video and writing short, Feature search Theory, feature chat with experts. The needs of these users are based on the sales made. Second, the solution design results in the Matketplace Learning Application are used to make it easier for users who want to learn about the marketplace. Initial solution design results form design visual, wireframe, and screen Flow.

After everything is formed, the mockup and prototype will be continued. Making a solution design is obtained from an analysis of user needs interviews. After the solution design has been completed, there is an evaluation about design solution the. Third, testing on Marketplace Learning Application Design is carried out using usability testing and UEQ (User Experience Questionnaire). In testing usability testing by measuring effectiveness, efficiency, and satisfaction. At the level of satisfaction of 73 %. While testing with a user experience questionnaire produces an application value that is below average. Judging from the pragmatic quality level with a mean level of 0.825, hedonic quality level with a mean level of 0.7 and overall the comparison to benchmarks is below average. The results of the test are carried out to improve the solution design so that the results are better.

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