

Development of an Android-Based Taekwondo Sports Coach Marketing Application

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ABSTRACT

The purpose of this research is to produce an application product in terms of the marketing field of android-based taekwondo martial arts trainers to make it easier for members (prospective athletes) to find competent trainers. This research is a type of research and development or Research and Development (R&D). The design used in this research is development research from Borg and Gall. The subjects of this study consisted of 25 people for small group trials and 40 people for large group trials. In the first small group (small) trial, the results of the research were obtained with a trial subject of 15 athletes and 10 coaches obtained a percentage of 92.86% with a decent category in the small trial. Based on the results of expert validation, it can be seen from the aspects of registration as a user 92%, registration as a coach 93.5%, ease of use 85%, and usefulness 93.5%. So on a small trial scale, application products in terms of the marketing field of android-based taekwondo martial arts sports trainers are valid. In the second group trial (large) obtained research results with 40 test subjects with 25 athletes with 15 coaches, a percentage of 94.00% was obtained with very feasible criteria. Based on the results of expert validation, the registration aspect as a user is 92.67%, the registration aspect as a coach is 94.33%, the aspect of usefulness is 94.67%, and the assessment on the aspect of ease of use of the coach is 93.67% (feasible). So on a large trial scale the application product in terms of the marketing field of android-based taekwondo martial arts coaches is valid. In this expert revision, there are no more revisions made by experts, so that the application product in terms of the marketing field of taekwondo martial arts sports trainers based on android is feasible.

KEYWORDS

Taekwondo; android-based; marketina; coach.

INTRODUCTION

The Industrial Revolution 4.0 is a technological advancement that combines cyber and otomatics, also known as the "cyber physical system." This shift impacts the way information is processed, reducing human involvement in the process (Harrigan, 2006). This results in improved work quality and production costs, but also benefits the entire society. With the industrial revolution 4.0, people are very easy to work. Effectiveness and efficiency in the production of an item is not something that is difficult anymore. The benefits of technology can also be felt by all fields, health, education, sports and others. One of the effects of technology is that it provides convenience for economic activities, such as marketing; Online-based products will have a significant profit impact on marketing profits (Villapol et al, 2017).

It is also known that not all technological advances have been applied in the world of sports (Krdžalić, 2019). Many components have not used internet facilities, including in the marketing of sports personnel. Current applications are still very minimal, especially those related to the marketing of sports personnel. The world of sports should follow these technological developments, but the reality is that the use of applications as a tool to develop training guides, sports marketing, coach marketing, is still very small, especially in martial arts.

Taekwondo is a martial art from South Korea that is quite easy to learn by anyone who wants to learn, on the other hand it is very important for self-protection. In Taekwondo there are belt levels that determine the level of each individual. The higher the belt level, the higher their level in Taekwondo (Raibowo et al, 2023).

The development of taekwondo martial arts is quite rapid and encouraging in Medan City. Based on the observations of researchers, many people want and are interested in this taekwondo martial art, to learn this taekwondo martial art requires a coach who already understands taekwondo martial arts and is competent in training it. To learn taekwondo martial arts properly, you must go through a coach ((Nam, 2021). But people have a lot of difficulty in finding information to get a good coach. not only getting information about good coaches, the socialization and promotion of this taekwondo martial arts is also still minimal.

Based on this, to support the problems that researchers raise, it is necessary to analyze the needs through questionnaires distributed to customers to see the extent of the applications that researchers develop and to see the need for applications that researchers design. The results of the needs analysis that researchers spread are as follows. 80% of athletes feel happy when practicing taekwondo at dojang-dojang, 90% of athletes want to continue practicing taekwondo without having to go to dojang-dojang, 90% of coaches want to continue to develop dojang-dojang through marketing applications, 90% of coaches have never known an application-based marketing application as a tool for marketing coaches to train taekwondo, 100% of coaches want to get a taekwondo coach marketing system application using the internet.

The development that will be carried out is the development of an android-based taekwondo martial arts application. In developing this android-based application, it is hoped that it can facilitate the community in finding prospective trainers and empowering trainers in Medan City. So that the needs of the community can be met and taekwondo martial arts will be more developed in Medan City.

RESEARCH METHODS

The research method used in this research is Research and Development (Sugiyono, 2016). This research method is the basis for producing certain products, testing the feasibility of these products or improving existing products (Alif, 2019). Based on the above opinion, this research discusses the development of taekwondo trainer marketing application with android. Therefore, this development research produces a website and marketing application for Taekwondo sports coaches. For this reason, the title in this study is "Development Of An Android-Based Taekwondo Sports Coach Marketing Application". The steps of this research are as follows according to Borg and Gall (2007):

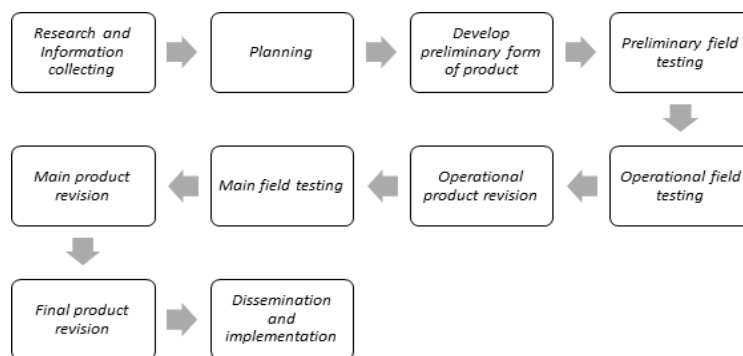


Figure 1. The scheme of development procedures is adapted from the Borg & Gall development procedure (Source: Borg &; Gall, 2007).

RESULTS AND DISCUSSION

Research and information collecting

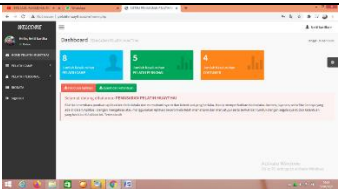
The development of taekwondo martial arts is quite rapid and encouraging in Medan City. To learn this taekwondo martial art requires a coach who already understands taekwondo martial arts and is competent in training it. However, people have a lot of difficulty in finding information to get a good coach. Let alone getting information about good trainers, the socialization and promotion of this taekwondo martial art is also still minimal. With this, to overcome the above problems, it is necessary to develop a taekwondo marketing application. marketing is a series of principles for selecting target markets (target markets), evaluating consumer needs, developing goods and services, satisfying desires, providing value to consumers and profits from the company. Currently, the rapid development of information in the digital era 4.0 makes information, education, and other services more easily accessible and used in everyday life so that marketing of sports experts such as taekwondo can be done quickly and easily.


Based on the needs analysis above, it can be concluded that taekwondo marketing applications are indeed needed by the community, considering that the percentage of the needs analysis is at 80%.

Planning

This product development is expected to be a product that can be developed systematically and logically, so that this product has the effectiveness and efficiency that is feasible to use. Looking for the concept of applications and websites from existing predecessor applications as a reference for developing an android-based Taekwondo sports coach marketing application, the following is the appearance of the application and the predecessor website found by researchers:

Table 1. Application Collection At This Time

No	Name	Picture	Information
1.	<i>Sports coach marketing website</i>	 Source: Netti Kartika's Website	Illustration: The website dashboard for Coaches/Customers after registering will display the number of camp coaches, professional coaches, customers, personal data, and call center.

		Dashboard for Muaythai Coach Link: Pelatihmuaythai.com	
2.	<i>GOJEK APPS</i>	 <p>Source: GOJEK Link: gojek.com</p>	Illustration: the main display of the gojek application after registering an account, the application is described with a flowchart or dfd (data flow diagram) system, as a reference for monitoring data processes and system workflows Data flow Diagram (DFD)

Based on the picture above, it can be concluded, this existing model application can be further developed for the application of sports service personnel.

Develop Preliminary Form of Product

The development of industrial android-based Taekwondo sports coach marketing applications aims to keep the data process smooth and organized, resulting in applications. described by a flowchart or dfd (data flow diagram) system, as a reference for supervising data processes and system workflows Data flow Diagram (DFD) Image of system data flow. Application Images that are already Available Application development that is carried out can be accessed online via the <https://Taekwondopractice.com> page.

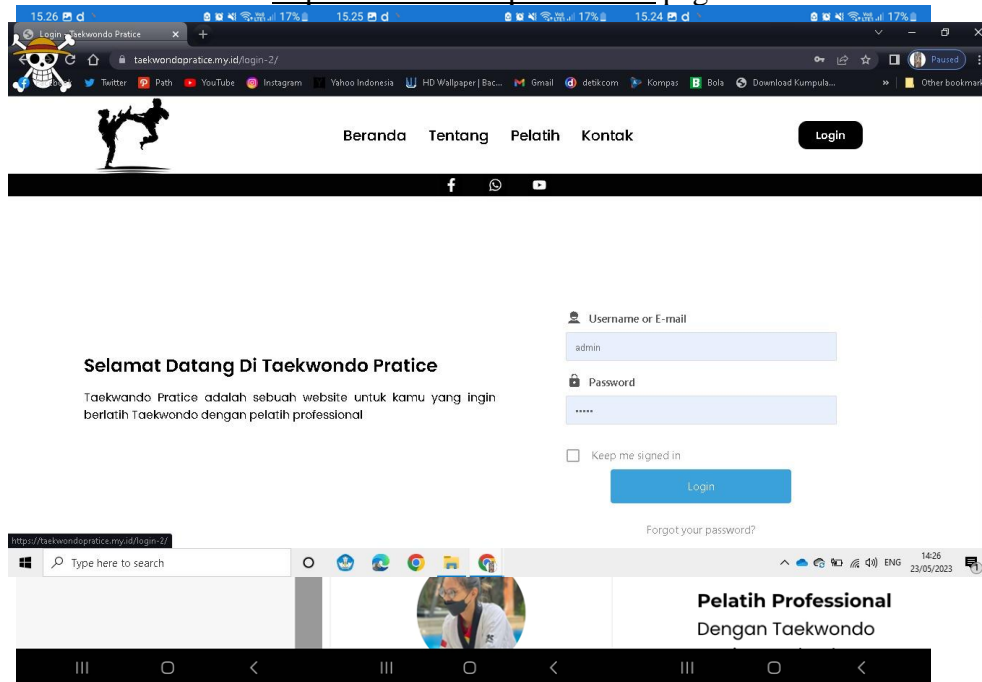


Figure 2. Products Before Revision

Preliminary Field Testing

The design validation stage is a product evaluation stage where validation is carried out by several experts. If the assessment of the experts states that the product that has been developed is feasible, the product can be tested in the field.

Table 2. Small Group Trial Expert Revision

Grading Indicators				
Respondent	1	2	3	Quantity
Experts	26	18	9	53
Percentase	87%	90%	90%	81,5%

Based on the results of expert validation, it is obtained that the material expert's assessment of the business profile aspect is 87% (Feasible), the HR aspect of Sports personnel is 90% (Very Feasible), and the Service Service mechanism is 90% (Very Feasible). Therefore it can be concluded that the aspect of the material expert's assessment states that the Taekwondo trainer application media is good. The overall percentage is obtained 81.5% with the category Feasible. The percentage results obtained are then classified to obtain data conclusions. The table will present the classification in percentages.

Table 3. Small Group Trial Expert Revision

Percentase	Criteria	Classification
0 - 20%	Not good	Not Feasible
20,1-40%	Less good	Less Feasible
40,1-70%	Good enough	Decent Enough
70,1-90%	Good	Feasible
90,1-100%	Excellent	Very Decent

Operational Field Testing

The author conducted an initial field trial on a limited scale involving 25 subjects. In this step, data collection and analysis can be done by interview, observation or questionnaire. This step is a limited product trial which includes:

- 1) Testing the product on a small group of 15 athletes and 10 coaches.
- 2) After being tested, the subjects were given a questionnaire response to the product to find out how important the product was.

The following are the results of design validation in this study:

Table 4. Small Group Trial Validation

RESPONDENT	Aspect 1	Aspect 2	Aspect 3	Aspect 4	Amount
1	10	19	18	18	70
2	10	18	18	20	68
3	10	19	18	18	68
4	8	19	20	20	71
5	10	19	18	19	71
6	8	20	18	18	70
7	10	19	20	18	74
8	8	18	18	18	70
9	10	18	18	20	75
10	8	18	18	18	72
Amount	92	187	184	187	650
Percentage	92 %	93,5 %	92 %	93,5 %	92,86 %

RESPONDENT	Aspect 1	Aspect 2	Aspect 3	Aspect 4	Amount
1	10	20	20	18	68
2	10	19	19	20	68
3	8	20	16	18	62
4	10	18	18	20	66
5	8	17	18	18	61
6	9	19	20	19	67
7	8	18	19	18	63
8	10	19	18	18	65
9	10	20	16	16	62
10	9	20	16	16	61
11	9	18	18	18	63
12	8	20	17	17	62
13	10	20	16	16	52
14	10	20	18	16	64
15	10	18	20	20	68
Amount	139	276	269	268	952
Percentage	92,67	92	89,67	89,33	90,67

From the results of research with trial subjects as many as 15 athletes and 10 coaches, a percentage of 92,86% was obtained in the feasible category.

Operational Product Revision

The research manuscript submitted to the supervisor and validator received revisions, from the guidance the researcher received input in compiling the display menu menu in the coach application that had been designed, so that from this input it could become a reference in the implementation of the taekwondo sports coach marketing application. Steps taken:

- a) Researchers bring the results of research to experts to see experts about product testing.
- b) Researchers revised the taekwondo coach marketing application at the Preliminary Field Testing stage.

The product that has been designed is then revised after the weaknesses are known. In the product design revision procedure, what researchers do is:

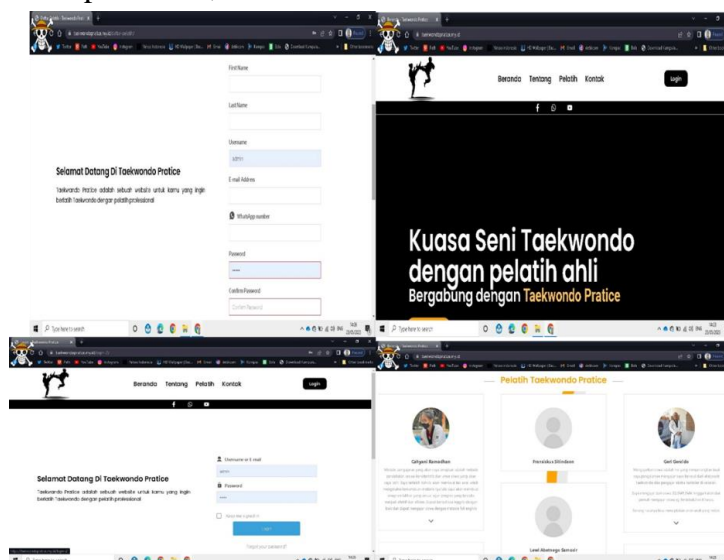


Figure 3. Products After Revision

Main Field Testing

The main trial involved 40 subjects. (1) conduct an initial field test of the product design, (2) it is limited, both the substance of the design and the parties involved, and (3) the initial field test is carried out repeatedly so that a feasible design is obtained, both in substance and methodology.

Conducting limited trials. At the product trial stage, the researchers did are:

- 1) Large group trials were conducted on 40 subjects consisting of 25 athletes and 15 coaches.
- 2) After the trial, a questionnaire was distributed to the sample to determine the effectiveness of the product developed.

Table 5. Results of Large Group Trials

RESPONDENT	Aspect 1	Aspect 2	Aspect 3	Aspect 4	Amount
1	10	19	18	18	65
2	10	18	18	20	66
3	10	19	18	18	65
4	8	19	20	20	67
5	10	19	18	19	66
6	8	20	18	18	64
7	10	19	20	18	67
8	8	18	18	18	62
9	10	18	18	20	66
10	8	18	18	18	62
11	10	19	20	19	68
12	9	18	18	20	65
13	9	19	19	19	66
14	9	20	20	19	68
15	10	20	20	20	70
Amount	139	283	281	284	987
Percentage	92,67	94,33	93,67	94,67	94

Assessment Indicator					
Respondent	1	2	3	4	Amount
1	10	20	20	20	70
2	10	19	19	20	68
3	8	20	16	20	64
4	10	18	18	20	66
5	8	17	18	18	61
6	9	19	20	19	67
7	10	18	19	18	65
8	10	20	18	18	66
9	10	20	16	16	62
10	10	20	16	16	62
11	10	20	18	18	66
12	8	20	17	17	62
13	10	10	16	16	52
14	10	20	18	16	64
15	10	18	20	20	68
16	10	20	20	20	70
18	10	20	20	20	70
19	10	19	20	20	69

20	10	20	20	20	70
21	10	20	18	20	68
22	10	20	20	19	69
23	10	20	20	20	70
24	10	20	20	20	70
25	10	20	20	20	70
Amount	233	458	447	451	1589
Average	9,71	19,08	18,63	18,79	66,21
Percentage	93,20	91,6	89,4	90,2	90,80

Main Product Revision

The steps in this stage will further refine the product being developed which includes (1) re- adapting the sports expert marketing application. (2) revising and maintaining the taekwondo trainer marketing application in android-based by involving potential product users, and (3) the results of the field test obtained a media design that is ready to be applied, both in terms of substance and methodology.

Based on the results of expert validation, the percentage according to the overall coach is 92.86% with a feasible category. Meanwhile, the percentage according to athletes as a whole is 90.67% with a very feasible category. So on a large trial scale the taekwondo coach marketing application is valid. In this expert revision, there are no more revisions made by experts, so the taekwondo coach marketing application is feasible (Yoon, 2021).

In the first small group trial (small), the research results were obtained with a test subject of 15 athletes and 10 coaches, so the percentage of assessment from the coach was 92.86% with a decent category in the small trial. Based on the results of expert validation, it can be seen from the aspects of registration as a user 92%, registration as a coach 93.5%, ease of use 85%, and usefulness 93.5%. Then the assessment of athletes with aspects registration as a user 92.67%9 Registration as a customer 92%, ease of use 89.67%, expediency 89.33%. The overall percentage obtained is 90.67% with a very feasible category.

In the second (large) group trial, the research results were obtained with a trial subject of 25 athletes with 15 coaches with a percentage of 94.00% in the large trial vali). Based on the results of expert validation, it can be seen from the aspect of registration as a user of 92.67%, an assessment of the registration aspect as a coach of 94.33%, and an assessment of the ease of use aspect of the coach of 93.67%. The percentage of product assessment of Taekwondo coach marketing applications, as a whole, obtained an overall average percentage of 94.00% with very feasible assessment criteria. Then the assessment of athletes with aspects of Registration as a user is 93.20%, an assessment of the registration aspect as a coach is 91.6% and an assessment of the ease of use of the coach is 89.4%. The results from the aspect of usefulness amounted to 90.2% The percentage of product assessment of Taekwondo coach marketing applications as a whole obtained an average overall percentage of 90.80% with very feasible assessment criteria.

The concept of sports marketing is a concept that is experiencing rapid growth due to the influence of sports globalization or the increasing popularity of sports as a business field in the modern era (Kahle and Riley, 2004).

With the concept of marketing from experts, researchers carry out media content specification activities to be developed by determining the contents of the Taekwondo trainer marketing application media (Beese, 2015). The media developed is the Taekwondo trainer marketing application which has several contents, namely material content The

planning and development stage consists of several activities, namely: 1) Selection of media product format, 2) Formulation of an outline of media content and description of media content, 3) design and develop products, 4) Expert validation, and 5) Product trials to users. product and media format selection activities are carried out to determine the right media in making Taekwondo trainer marketing business application products, namely those developed by researchers themselves and adopting from relevant literature sources. The media that will be used in this research are 1gb hosting space, 100gb bandwidth, 2 FTP Accounts, Database (My ISAM) Mysql.

CONCLUSION

Research that produces an android-based taekwondo sports coach marketing application product based on research data consisting of needs analysis, product design, expert validation, small group test, large group test and effectiveness test so that a discussion of the research results is obtained, the conclusions of this study are as follows:

1. Android-based taekwondo sports coach marketing application products can be developed and applied to people who are looking for taekwondo coaches.
2. Based on research data, the taekwondo coach marketing application obtained effective and efficient results for disseminating to the public.
3. The validity of the taekwondo coach marketing application from the product trial registration is 92.67%, in terms of the validation sheet instrument reaches 93.5% . The level of taekwondo coaches who have been validated by validators, namely reaching 94.33% with an excellent category in terms of material experts, 78.5% with a good category in terms of application media experts, 88.80% with a good category in terms of coach users (Coach 35) 94.67% excellent category in terms of customer users 90.80%. This indicates that the level of validity of muaythai trainers is ready to be utilized in coach services, but it is necessary to add something that is lacking, the additions made are not too large and not fundamental.

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