

Go Referee Application for Futsal Association at Wonosobo Regency

Zainal Arifin[✉], Sulaiman Sulaiman, Fajar Awang Irawan

Universitas Negeri Semarang, Indonesia

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Abstract

Android is the most widely used operating system for smartphones. The Go-Referee Application is currently being developed as a learning media solution that incorporates knowledge technology on Referee Databases, Game Rules, and Professional Referee Video Guides. Android application development might be a useful tool for cognitive-based learning. It can assist futsal referees with their psychomotor development. The purpose of this study was to examine and analyze the model and development of an Android-based Go-Referee application for the Wonosobo Regency Futsal Union in Central Java. Research and development method was used, with Sugiyono's research steps adapted to ten. The research was conducted on teams or members of the Wonosobo Regency Futsal Association in Central Java, including AFK administrators, referees, futsal event organizers, and futsal fans. The results showed that the development of the Android-based Go-Referee Application was successful and feasible for use as a training medium to assist Wonosobo futsal referees in deepening their knowledge of futsal refereeing and in locating referees with District, Province, and National Licenses. If the material expert validation score was 100%, showing very possible, 94%, indicating decent/good. The Go Referee application received a 91.6 % assessment score in the small group trial, putting it in the good/decent category, and a 92.1 % assessment score in the large group trial, putting it in the appropriate/good category. Go Referee application was determined to be a technologically advanced sports development breakthrough that made it easier for referees and the Wonosobo community to obtain a licensed referee database in Wonosobo.

[✉] Correspondence address:
Kampus Pascasarjana UNNES Jl. Kelud Utara 3, Gajahmungkur
Semarang
E-mail: zainalarifin386@students.unnes.ac.id

INTRODUCTION

Android is a mobile operating system developed by Google for Smartphones and Tablets. The operating system can be thought of as a bridge between the device and its users, allowing users to communicate with their devices and run Android-based applications. Android is the most popular smartphone operating system. The development of the Go-Referee Application is now the greatest solution for using a learning medium in conjunction with knowledge technology regarding the Referee Database, Game Rules, and Professional Referee Video Guidelines. Android application development can be used as an appropriate medium for cognitive-based learning. Thus, it is anticipated that the usage of Android-based applications will assist in the psychomotor development of futsal referees in Wonosobo Regency (Syahroni & Amiq, Fahrial. Nurrochmah, 2016).

Futsal is a team sport competing two teams which is contain of five players each, similar to football but with a smaller field, goal, and ball size and stricter game rules (Moore et al., 2014). According to Syakur et al., (2017), the referee is a person who has full authority to enforce the game's rules, from thse minute enters the field until end of game. According to the Federation of International Football Associations (2012), the referee has full authority to enforce the game's rules in connection to the match for which he or she has been chosen to officiate (Sanusi, 2019). The referee is the person designated as the match's leader and is entirely accountable for the course of a match, from entering the field to leaving the field.

The Go-Referee application was created to assist the public in discovering professional futsal referees or futsal referees who already hold a license in Wonosobo Regency. Along with searching for referees licensed, this application can be used as a learning tool for futsal refereeing. There is also a video lesson on how to become a futsal referee included in the Go-Referee application. Additionally, this

application contains complete futsal match regulations, which are updated annually, and can serve as a handbook or pocketbook for futsal referees, as users of this application can alter the rules using their own linguistic styles. Respectively, in the expectation that this feature will make it easier for users of the Go-Referee application, particularly referees in futsal games, to access a guide.

The authors anticipate that the Go-Referee application would make it easier for event organizers to identify professional referees, owing to the platform's referee database. The purpose of this study was to examine and analyze the model and development of an Android-based Go Referee Application for Futsal Association in the Wonosobo Regency Central Java.

METHODS

This study was using research and development, with Sugiyono's research steps converted into ten steps. The subjects of the research on Android-Based Go Referee Application Development were teams or members of the Wonosobo Regency Futsal Association in Central Java, including AFK administrators, referees, organizers of futsal events, and futsal enthusiasts. Small group trials with ten respondents and large group trials with 42 respondents were done.

A questionnaire and an evaluation sheet were created using the Google Form Application as the study instrument. The data obtained are descriptive qualitative and quantitative in nature. Quantitative data in the form of numbers derived from the responses to a questionnaire. The data collection process was divided into two stages: a small-scale trial and a large-scale trial.

The data analysis was used to analyze the feasibility assessment results for the Android-based soccer tactics training application, as reported by Sugiyono (2013) as follows:

$$SCORE = \frac{\text{Score Count}}{\text{Score Creteria}} \times 100\%$$

The data calculation outputs a percentage multiplied by 100 percent. After calculating the percentage using the algorithm, the viability of the Go Referee application was classified into four eligibility categories in this development research using the following scale.

Table 1. Category Eligibility Percentage

| Scores (%) | Eligibility Category |
|------------|----------------------|
| <40 | Poor |
| 40-55 | Deficient |
| 56-75 | Fair |
| 76-100 | Good |

Source: Arikunto (2002)

The questionnaire was measured using an attitude scale, namely the Likert scale. According to Sugiyono (2014), the Likert scale was used to measure a person's or group's attitudes, opinions, and perceptions. In study, the researcher clearly specified this social phenomenon, which will be referred to as the research variable. Each questionnaire point has four response options: Very Good (VG), Good (G), Less (L), and Very Poor (VP). Each point has an indicator that indicated whether the statement's result was positive or negative. A score was assigned to each response for the purposes of quantitative analysis.

The following table summarized the scores assigned by AFK members and event organizers to the statements in the Android-based Go Referee Questionnaire:

Table 2. Go Referee Application Questionnaire Answer Scoring

| Criteria | Score |
|----------------|-------|
| Very Good (VG) | 4 |
| Good (G) | 3 |
| Poor (P) | 2 |
| Very Poor (VP) | 1 |

Each questionnaire point has four response options: Very Good (SB), Good (B), Less Good (K), and Very Poor (VP). Each point has an indicator that showed whether the statement's result is positive or negative. For

quantitative analysis reasons, the answer was assigned a score of.

RESULT AND DISCUSSION

Research Results

Description of the Product Go-Referee was the company that is developing this refereeing program and database of referees. The following was a summary of the Go-Referee Application's features. Go-Referee application can be downloaded in the playstore or with this link <https://bit.ly/3HutC1Z>. Following the instruction to download the application, click the download button, click the "allow to install this app" button.

The Application's Main Menu was divided into various sub-chapters, the first of which is Product Development Products. On the Home menu of the Go-Referee application, there were seven material menus: Game Rules, Referee Essence, Referee Movement, History, Referee Database, About, and Profile. The following is a screenshot of the Go-Referee's Home menu.



Figure 1. Application Initial Display

The following was a display of the Game Rules menu on the Go-Referee application.



Figure 2. Game Rules Menu Display

Game rules menu displays the Field of Play, Ball, Players, Player Equipment, Referees, Other Game Officials, Game Duration, Starting and Restarting Game, Ball Out and Out of Game, Determining Game or Home and Away, Offense, Free Kick, Penalty Kick, Kicks In, Corners and Goals Cleaners. The following is the appearance of the Referee Essence menu on the Go-Referee application.



Figure 3. Referee Essence Display

Referee Essence Display menu displayed the meaning of the referee, the authority of the referee, the powers and duties of the referee, and other match officials. The following is a display of the Referee Movement menu on the Go-Referee application.

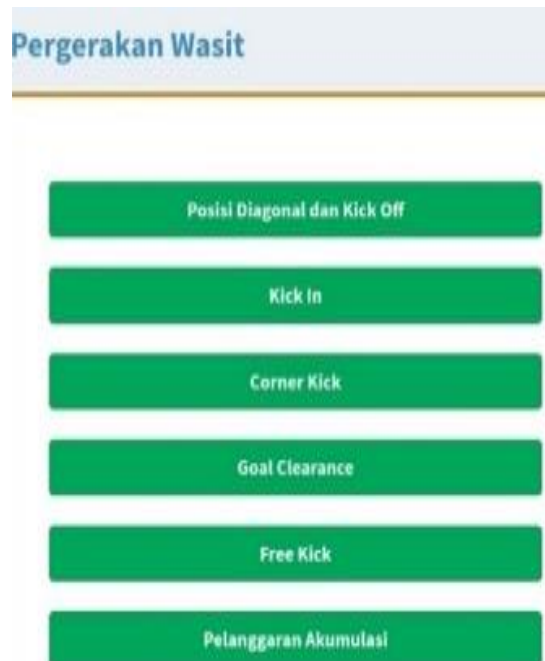


Figure 4. Referee Movement

Table 3. Go-Referee Application Material Expert Research Data

| Aspect | Score Count | Score Criteria | % | Category |
|---------------------|-------------|----------------|-----|----------|
| Content Eligibility | 32 | 32 | 100 | Good |
| Grammar | 8 | 8 | 100 | Good |
| Display and use | 36 | 36 | 100 | Good |
| Total | 76 | 76 | 100 | Good |

In the Referee Movement View menu displays Diagonal Position and Kick Off, Kick In, Corner Kick, Goal Clearance, Free Kick, Accumulated Offense, Wall Management, and Penalty Kick. The following is a display of the History menu on the Go-Referee application.



Figure 5. History Display

On the History Display menu displays the Definition of Futsal, and the History of Futsal (Yuniarto et al., 2018, p. 5). The following was a

view of the Referee Database on the Go-Referee application.

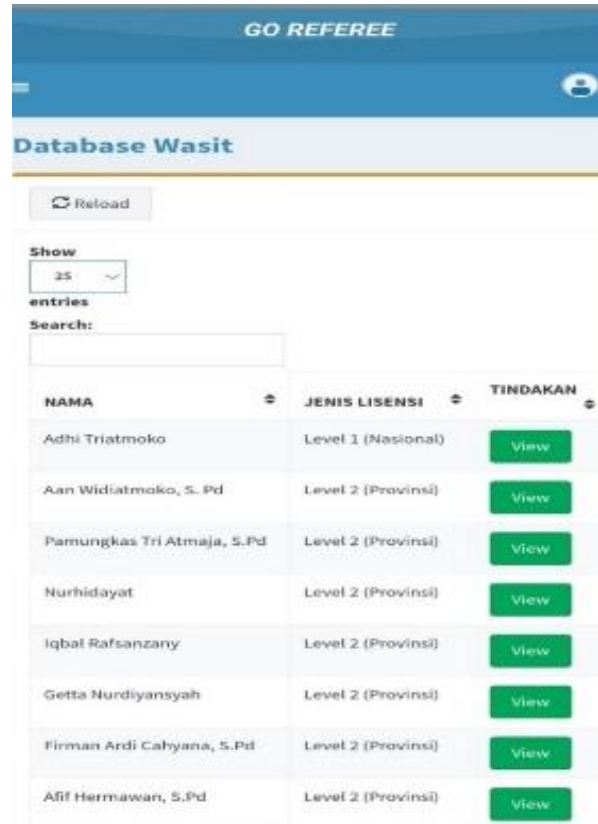


Figure 6. Referee Database Display

The Referee Database Display menu displays the Referee Name, License Type, Referee Personal Data. The following is the About view on the Go-Referee application.



Figure 7. About Go Referee

The About Referee Application menu displays was to learn about futsal sports including all game rules, referee movements in

futsal games, and also the referee database to make it easier to search for futsal referees who already have a license in the District. Wonosobo. The material expert who became the validator in this study was Aan Widiatmoko, S. Pd who mastered the field of Futsal. The media expert who became the validator in this study was Hilarius Wira Widya Iswara, M. Pd who has expertise in the media field.

Table 4. Go-Referee Application Media Expert Research Results Data

| Aspect | Score | Criteria | % | Category |
|-------------|-------|----------|------|----------|
| | Count | Score | | |
| Display | 16 | 16 | 100 | Good |
| Grammar | 14 | 16 | 87.5 | Good |
| Programming | 15 | 16 | 93.7 | Good |
| Use | 19 | 20 | 95 | Good |
| | 81 | 88 | 94 | Good |

This android application was revised once by media and material professionals. Following the revision, the Go Referee application is declared practical and can move forward to the respondent trial stage for futsal players, particularly futsal referees or prospective futsal referees, futsal players, and futsal event organizers.

Table 5. Material Expert Assessment Results Data

| Aspect | Score | | % | Category |
|---------------------|-------|----------|------|----------|
| | Count | Criteria | | |
| Content Eligibility | 1187 | 1280 | 92.7 | Good |
| Grammar | 297 | 320 | 92.8 | Good |
| Display & Use | 1309 | 1440 | 90.9 | Good |
| TOTAL | 2793 | 3040 | 92.1 | Good |

The small group trial involved ten respondents, including members of the Wonosobo Regency Futsal Association, and was conducted online using a google form that was processed using a google spreadsheet. The researchers then captured screenshots of the small group trial results, which included two images, one of which contained three tables,

namely name, address, and occupation, and the other of which contained nineteen tables according to the questions in the study.

The results of the small group trial showed that the Go Referee application was feasible in terms of content, receiving a percentage score of 90.3%, it considered good/decent; from a grammatical point of view, it received a percentage score of 93.7%, which is considered good/decent; and from an appearance and use point of view, it received a percentage score of 90.8%, which is considered good/decent. The total number of small group trials conducted on the Go Referee application was 91.6%, which was in the good/decent category, implying that this application was ready for further testing.

42 respondents participated in the large group experiment, which included football players such as coaches, players, and football enthusiasts. There were inputs from the 42 respondents to the researcher's three questions. The following were the findings from the large group trial of the Go Referee application.

The results of the large group trial indicate that the Go Referee application is feasible for the content at a score of 92.7 percent, which is considered good/decent; from a grammatical standpoint, it receives a score of 92.8 percent, which is considered good/decent; and from an appearance and use standpoint, it receives a score of 90.9 percent, which is considered good/decent. With a total trial rate of 92.1 percent in the good/decent category for this huge group of android-based soccer training program applications, it can be concluded that this application is viable for mass production.

Based on feedback from Media Experts and Material Experts, it was decided to make several revisions, including the addition of the Referee Nature Menu, the addition of a sub menu to the Game Rules, the reduction of the History sub menu, the addition of the Referee Database along with the Referee's Profile and License Type, and the replacement of Fonts and Icons in the Game Rules.

After validating and revising the application using media and material experts,

the Go Referee application was worth testing. Small group trials included ten participants and large group trials with 42 respondents including football players such as coaches, players, and supporters.

Table 6. Small Group Trial Results

| Aspect | Score | | % | Category |
|---------------------|-------|----------|------|----------|
| | Count | Criteria | | |
| Content Eligibility | 289 | 320 | 90.3 | Good |
| Grammar | 75 | 80 | 93.7 | Good |
| Display and Use | 327 | 360 | 90.8 | Good |
| TOTAL | 691 | 760 | 91.6 | Good |

Data was generated that demonstrates good/feasible trials based on the results of small group and large group trials. These findings correspond to the established assessment requirements. The feasibility category used in this study was divided into four sections: values less than <40% are classified as not good/not feasible, values 41–55 % were categorized as less good/less appropriate, values 56–75 % were categorized as quite good/fair enough, and values 76–100% are categorized as eligible.

Discussion

The development of the Go-Referee Application was the greatest solution for utilizing a learning medium in combination with knowledge technology regarding the Referee Database, Game Rules, and Professional Referee Video Guidelines. Android application development can be used as a good medium for cognitive-based learning. Thus, it was anticipated that the usage of Android-based software will help in the psychomotor development of futsal referees in Wonosobo Regency (Syahroni & Amiq, Fahrial. Nurrochmah, 2016).

Authors require research references to establish the validity of their research problem, their originality, the foundation for formulating hypotheses, and proposed theoretical research. Several studies have been conducted on training methods with variable results:

Beni Hamzah, et al, (Hamzah & Hadiana, 2018) The effect of using a problem based learning model on passing skills in futsal games. The purpose of this study was to determine whether there was an effect of the problem-based learning model on futsal passing skills. The result of this research is that the problem-based learning model has a significant effect on the passing skills of students in class XI IPA I MAN I Kuningan.

Bara Yusuf S P, et al, (P et al., 2017) The level of anxiety of the referee before, during and after leading a futsal match. The purpose of this study was to examine the anxiety level of the referee before, during and after leading the match. The results of this study are that there is referee anxiety before, during and after leading the match.

Vita Fradiantika, et al, (Fradiantika et al., 2013) The behavior of PSIM Yogyakarta football supporters. The purpose of this study was to determine the behavior of football supporters of PSIM Yogyakarta. The results of this study are the two groups of supporters of Brajamusti and The Maident behave fanatical in providing support for PSIM, so that it often causes fights between supporters.

The development of the Android-based Go Referee application is designed and produced as a training medium that makes it easier for futsal referees in Wonosobo to deepen material on refereeing in futsal games and make it easier for the Wonosobo community to find referees who have both Regency Licenses, Provincial Licenses and National Licenses who can easily accessed and obtained through the Playstore. This research underwent several stages, namely from Potential and Problems, Information Gathering, Product Design, Design Validation, Design Revision, Small Group Trial, Product Revision, Large Group Trial, Product Revision, and Mass Production. (Puspitasari et al., 2017).

After the product is produced, it is evaluated by material and media experts. Validation by material experts revealed an 81 percent evaluation result, indicating that it was practical, and included ideas for adding the

Referee Essence Menu, expanding the Game Rules submenu, and reducing the After History submenu. Following material expert validation, this application was evaluated by media experts, who gave it a 92.1 percent feasibility rating and made several suggestions, including the addition of the Referee Database, which includes the Referee's Profile and License Type, as well as the replacement of Fonts and Icons in the Game Rules.

The application was evaluated in two stages: small group trials and big group trials. This application achieved an assessment score of 77.5 percent in a small group trial, placing it in the good/decent category. This application achieved an assessment score of 83.1 percent in the large group trial, placing it in the good/decent category (Gifary, 2015).

After receiving changes from media and material specialists, the Go Referee application ready to be massed. The Go Referee application's homepage had sections on Game Rules, Referee Nature, Referee Movements, History, the Referee Database, About the Application, and Profiles (Jumad. 2019).

The Game Rules feature includes sub menus for the Playing Field, Ball, Players, Referee Equipment, Referees, and Other Match Officials, Game Duration, Starting and Restarting the Game, Out-of-Game Balls, Determining Home and Away Match Winners, Offenses, Free Kicks, Penalties, Kicks In, Corners, and Goal Cleaners (Fröhlich, 2014).

Referee Authority, Referee Power and Duties, and Other Match Officials were all sub-menus inside the Referee Reality feature. The Referee Movement function was divided into eight submenus: Diagonal Position and Kick Off, Kick In, Corner Kick, Goal Clearance, Free Kick, Accumulated Offense, Wall Management, and Penalty Kick (Bermain, 2013).

The History section was divided into two sub-menus: Futsal Understanding and Futsal History. The Referee Database feature stores the Wonosobo Referee Database in the form of Name, License Type, and Personal Data, as well as a Photograph of the Referee Profile. The application's feature describes the application's

purpose, which is to serve as a training medium that enables futsal referees in Wonosobo to expand their knowledge of refereeing futsal games and to assist the Wonosobo community in locating referees who hold Regency Licenses, Provincial Licenses, and National Licenses that can be downloaded, easily accessible to obtain from the Playstore. Developer Profile, Supervisor 1 and Supervisor 2 were all included in the Developer Profile feature (Wibowo, 2018).

The Android-based Go Referee application was limited, as is the scope of this study, which includes the Wonosobo City Community, particularly Futsal Referees, Event Organizers, Futsal Players, and Futsal Connoisseurs. The limitations of this research include the fact that it was not conducted across multiple places in Central Java and did not include a wide range of respondents. As a result, additional research required that includes a wider range of responders.

CONCLUSION

The study concluded that the Go Referee application was a technology-based sports development breakthrough designed to make it easier for referees and the Wonosobo community to obtain a licensed referee database in Wonosobo. Go Referee application's menu provides both practical and theoretical benefits to assist in the process's operation futsal competitions. The Android-based Go Referee application was built with the goal of providing futsal referees, players, and event organizers with a pleasant futsal experience. The Go Referee application received positive feedback on its material, language, appearance, and use. The research findings of the Android-based Go Referee application are favorable and appropriate for use as a teaching medium for futsal referees in Wonosobo. The acceptance of the product by the Wonosobo Regency Futsal Association Team, among others, is to deepen the material on refereeing futsal games and to expand its reach, making it easier for the Wonosobo community to find referees with

Regency, Provincial, and National licenses. Go Referee can be readily downloaded on the Playstore.

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