

Original Research Paper

## Implementation of Pre-Marriage and Parenting Education Information System with Android-Based Agile Method

Reza Fahlevi<sup>1</sup>, Joko Riyanto<sup>1</sup>

<sup>1</sup> Pamulang University. Tangerang, Indonesia.

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### \*Corresponding Author:

Reza Fahlevi  
Email:  
rezarffahlevi@gmail.com

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**Abstract:** A lot of couples do early marriage, but most of them do not understand what marriage really means. The unpreparedness of the couple in marriage can have a big impact on their married life which leads to divorce and also have a negative impact on their children. An Android-based pre-marriage and parenting education information system can be an alternative to simplify the preparation and learning process for couples and parents. The method used for the analysis and design of the pre-marriage and parenting education information system uses the literature study method and data collection methods such as: observation and questionnaires to married couples and their parents, the aimed as a source for designing and building information systems related to pre-marriage and parenting education. The results of the method used include couples and parents being able to learn and prepare for married life as well as increasing knowledge about child parenting through their Android smartphones with the materials sourced from experts and there was a forum that can be used to discuss with other users or discussion with educator.

**Keywords:** Agile, Education, Information Systems, Parenting, Pre-Marriage.



## 1. Introduction

The development of technology is very fast it makes all activities and learning easier with the application, especially on android applications that we often carry with us and can be used practically and efficiently.

According to law number 1 of 1974, marriage is an inner and outer relationship between a man and a woman to form a happy and eternal household or family based on the One Godhead. The government's efforts in developing the purpose of marriage, including the issuance of the Minister of Religion (KMA) No. 477 of 2005, regarding the provision of knowledge about marriage in the household to prospective brides. This regulation was reinforced by the publication of the Regulation of the Director General of the Islamic Community Guidance Number DJ.II/542 of 2013, concerning Guidelines for the Implementation of Pre-Marriage Courses for People of Marriageable Age Who Will Marry. The Prenuptial Course provides married-age teenagers with knowledge, understanding, skills, and awareness-raising regarding domestic and family life [1] [2] [3].

Based on the issues raised, the authors wish to develop an application that can serve as a forum for pre-marriage and parenting education, as an alternative to supporting the preparation and learning process.

## 2. Literature Review

### 2.1. Parenting Education

Parenting is the process of growing, educating, and teaching various things that will later be relevant to children's lives when they grow up. Parenting applied to children includes various aspects that exist in a child, such as attention to the development of children in the early stages of growth and development, social, emotional, and spiritual aspects of children, because this will determine the success and success of children when they already grown. Parents have an important role in their children's growth by parenting them. As a result, the initial education for a child is home education, which is the responsibility of parents to teach their children [4].

Marriage and family have a lot of problems from a small things to serious. From a small argument to the destruction of marriage life, which results in the emergence of a "broken house." The initial error in the construction of a household can be the cause of the family's breakdown in the days before marriage, but it can also appear during married life. Some couples are "unprepared" for the life they lead due to a lack of educational outreach, as well as a lack of specific media to exchange experiences or discuss family life and children. In other words, there are many variables that contribute to marriage and homelife not working as intended [5].

Currently, a lot of couples do early marriage, but most of them do not understand what marriage really means. The unpreparedness of the couple in marriage can have a big impact on their married life which leads to divorce. More than 50 percent of child marriages fail, and end up with divorced. There have been cases where a marriage was only recently ended. This usually happens because females do not want to fulfill their responsibilities as wife, as well as a lack of preparedness on the part of each partner who wants to marry. Marriage at a young age has an impact not just on the couple but also on their children. Because women who marry before the age of 20 will face uterine problems when pregnant. Their unstable temperament and emotions might lead to violent behavior against children, and even killing of their biological children [6] [7].

### 2.1. Agile Model

Haryana said, "Agile Development Methods is the latest software development methodology based on development techniques with short time / short-term systems and has the ability to adapt quickly" [8].

According to Saqqa [9] the Scrum model is an agile software development method. Scrum principles are in accordance with the principles contained in the rapid device development method used to guide software development activities, such as meeting requirements, analysis, design, and delivery [10]. The series of activities in the scrum model consist of:

- Backlog Activities
- Activities
- Scrum Meeting Activities
- Demo

The system development method used in this research is agile software development methods, using the Scrum Model, which includes several stages including [11]:

1. Backlog

- Preparation of priority details on the features that will be made in the pre-marriage and parenting education information system that will be built.
2. Sprints  
Preparation of activities to be carried out to meet the requirements set out in the backlog with a realization duration of every 14 working days.
  3. Scrum Meeting  
Hold a meeting with the appointed team to discuss the progress of system development activities.
  4. Demos  
Indicates an application feature that has been created for the user to evaluate.

Meanwhile, each development process consists of several series of activities as follows [12]:

1. System Requirements Analysis  
In this step an assessment of the user was carried out to explore in detail the software requirements needed by the user, namely through observation and questionnaires.
2. Design  
In the design step, system design was carried out, starting from system architecture design, business process design, database design, to user interface design. The tools used in this design step were Unified Modeling Language (UML) and Entity Relationship Diagram (ERD) / Logical Relational Structure (LRS) for database design.
3. Code Generation  
In this step, the program code was written using the Dart language and the Flutter framework, while the software for database management used MySQL.
4. Testing  
Testing was carried out to minimize errors and ensure that the output produced is in accordance with user requirements, in this case used the black box testing method.
5. Support  
Support was carried out to follow up on changes that users need after the feature has been presented. The cause of changes can occur due to errors that appear and were not detected during testing or adaptation to new needs/environments.

### **3. Methodology**

Data collection methods to collect data from research samples, carried out with certain methods accordance to the objectives this research. The techniques used in data collection are as follows:

#### **3.1. Data Collection**

Based on the discussion above, the author used the following data collection methods in developing this application:

- 1) Literature review  
In this research, it is inseparable from the data contained in reference books such as thesis writing guidelines, journals and other books related to the preparation of this thesis as a theoretical basis to solve the problems encountered.
- 2) Observation  
In this case, this method is carried out to collect data directly related to pre-marriage and parenting education from several couples who are getting married, materials from KUA, and parents.
- 3) Questionnaire  
According to Sugiyono [13] Questionnaires is data collection techniques carried out by giving a set of questions or written statements to respondents to answer [3]. In this case, the data collection technique was done by giving a set of questions to respondents to answer, the list of questions was made in a structured manner in the form of multiple choice questions and open questions. This method used to obtain data about the perception of pre-marriage and parenting from respondents.

#### **3.2. System Development Method**

Agile model used in the development process.

## 4. Finding and Discussion

### 4.1. Activity Diagram

The pre-marriage and parenting education information system that has been running for married couples or parents, one of which is to open a browser, then write keywords in a search engine to find articles or videos that match with what they want, after that the results page appears [14]. Search then they have to select and filter the content links where validated and accordance to their needs. So this makes it difficult for married couples and parents to choose the educational content that they want to learn [15].

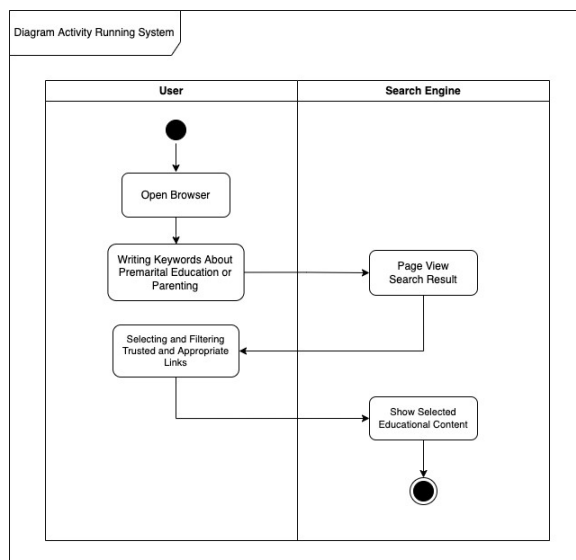


Figure 1. Activity Diagram of the Running System

### 4.2. Use Case Diagram

The use case diagram is a description of the interaction between the application components and their users, here is a description of the use case that has been made by the author in designing an Android-based pre-marriage and parenting education information system.

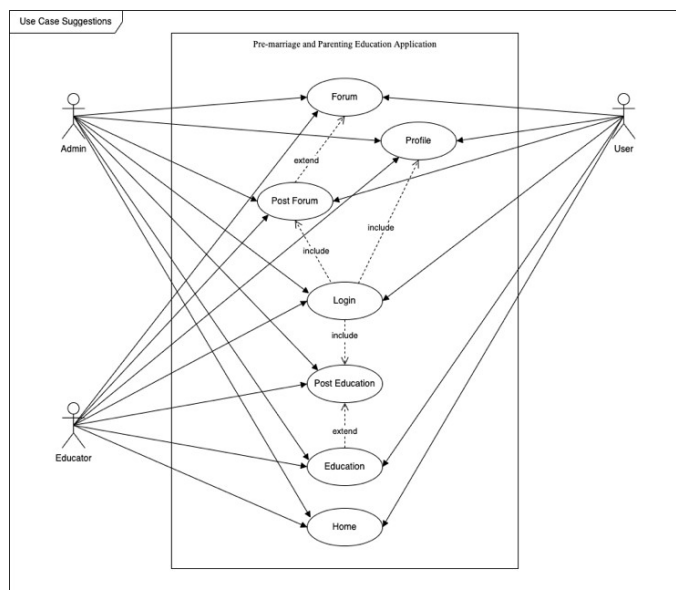


Figure 2. Use Case Diagram Proposed

Information:

- a) Admin/Educator/User can access the forum
- b) Admin/Educator/User can open profile after login
- c) Admin/Educator/User can post forums via the forum menu if you have logged in
- d) Admin/Educator/User can login by filling in email and password
- e) Admin/Educator can add or change educational content through the education menu if you have logged in
- f) Admin/Educator/User can access education
- g) Admin/Educator/User can access the homepage.

**4.3. Activity Diagrams for Educators and Users**

Figure 3 shows an activity diagram for educators and users, first the user opens the education menu, after that a list of educational content will appear, then the user chooses which educational content he wants to see, then can comment or ask questions about the content. For educators prepare educational content and save it. Educators can also view details of educational content, then educators can change educational content or reply to comments or questions on educational content.

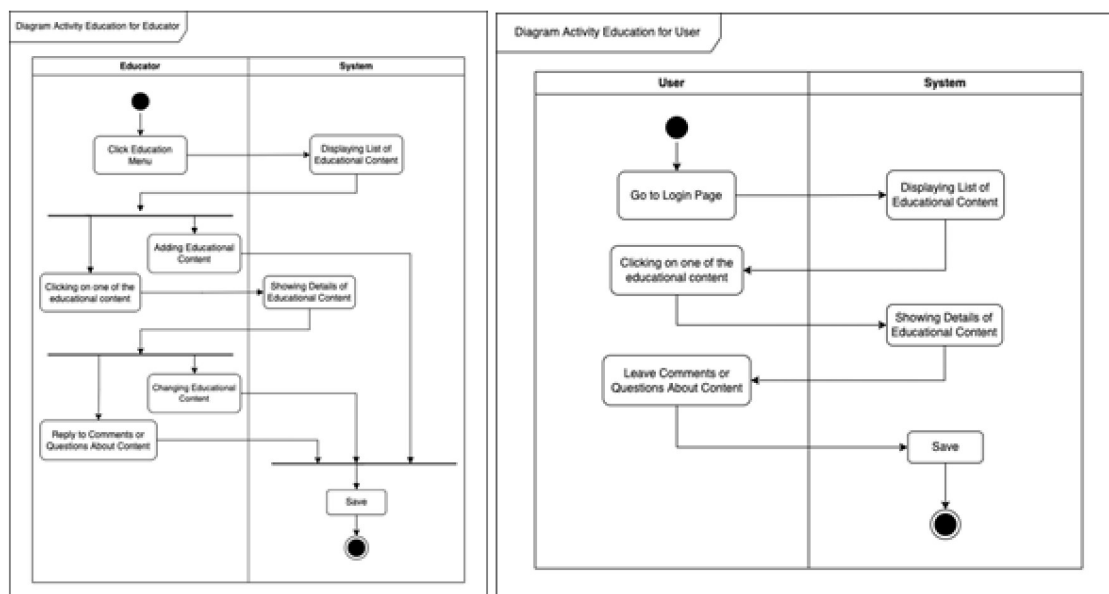


Figure 3. Activity Diagram for Educators and Users

**4.4. Interface Implementation Results**

Implementation of the interface is done by attaching a program designed in the form of program output, the following is the implementation of the program interface from the pre-marriage and parenting education information system:

**4.4.1. Homepage**

The Home page is the initial view of the application when it is first opened by the user. This page contains an informational or promotional banner at the top, followed by a list of recommended content for each section, information from the content list includes:

- 1) Title
- 2) Category thumbnail, and
- 3) Source of the content.

Figure 1 shows the Homepage views.

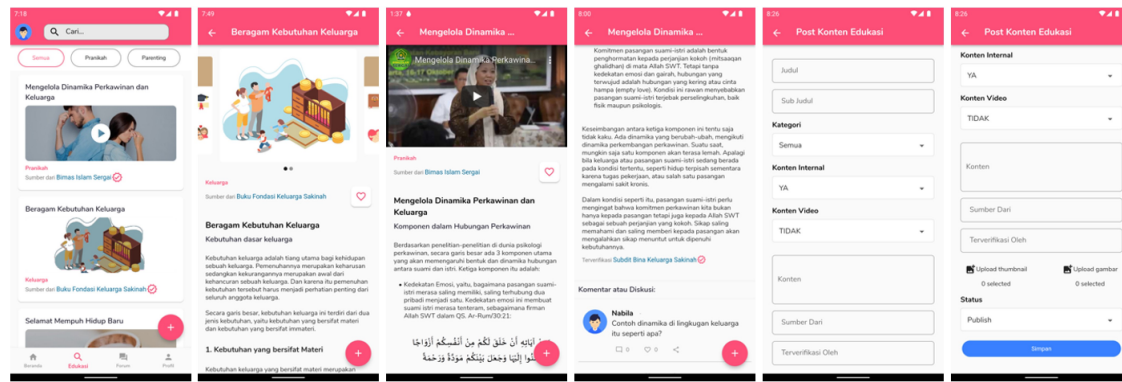


Figure 4. Homepage

## 5. Conclusion

Based on the results of the research, design and discussion that have been carried out, it was concluded that the implementation of a pre-marriage and parenting education information system using an Android-based agile method was successfully created. The pre-marriage and parenting information system has been able to function in accordance with the expected design and output, and the system can meet the initial objectives of the research. The pre-marriage and parenting education information system is able to carry out several processes consists of:

1. With the existence of a pre-marriage and parenting education information system, it can be an alternative learning for couples and parents.
2. With the existence of an information system for pre-marriage education and parenting, couples and parents can seek information and increase insight related to pre-marriage and parenting education.
3. The existence of a pre-marriage and parenting education information system provides a specific media or platform for parents and married couples to discuss, ask questions or share experiences.

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