# Assessment of Tilawati Jilid Promotion at Darul Falah Lamandau Foundation Using the Profile Matching Method

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**Abstract**

The assessment of tilawati jilid promotion refers to an activity performed to the students' ability before they study the next jilid. This step is to determine the success of learning of the jilid. The research was carried out by applying the profile matching method to calculate the values by using the standard values. By using the Profile Matching method, the results were that 5 students were promoted to the next jilid and 2 students had to improve their ability. In the accuracy test, 7 test data were used based on the original test data and system test data. Based on the comparison, the 7 data had the same results as the original data. Therefore, the accuracy calculation obtained a rate of 100%.

**Keywords***: Assessment of jilid promotion, Profile matching, Tilawati*

*Abstrak*

*Penilaian kenaikan jilid tilawati merupakan kegiatan yang dilakukan untuk mengevaluasi kemampuan santri sebelum dapat belajar ke jilid selanjutnya. Langkah ini dilakukan untuk mengetahui keberhasilan kegiatan pembelajaran pada jilid yang dipelajari. Penelitian yang dilakukan, menerapkan metode profile matching untuk melakukan perhitungan nilai dengan nilai standar. Dengan penggunaan metode Profile Matching, didapatkan hasil: 5 santri naik jilid dan 2 santri perbaikan. Pada pengujian akurasi, digunakan 7 data uji berdasarkan data uji asli dan data uji sistem. Dari hasil perbandingan, sebanyak 7 data memiliki hasil sama dengan data asli. Sehingga, pada perhitungan akurasi, didapatkan tingkat akurasi sebesar 100%.*

*Kata-kata kunci: Penilaian kenaikan jilid, Profile matchin, Tilawati*

## 1.    Introduction

Technology that is growing at this time is very supportive of the needs of an agency **[1]**. Information technology is a tool that helps to process data into information and to disseminate information on the boundaries of space and time **[2]**. Information technology is growing with computational methods, one of which is the decision-making system method (Decision Support System). By using the decision support system method, it is hoped that it will help facilitate those who carry out decision making **[3]**. Decision makers are individuals and foundations which are community institutions.

Darul Falah Lamandau Foundation is a community institution that oversees several educational institutions with a religious focus. The foundation is located in Bumi Agung Village, Bulik District, Lamandau Regency. The method of learning the Qur'an at every educational institution at Darul Falah Lamandau Foundation is the *tilawati* method. The 150 students at Darul Falah Lamandau Foundation studied *tilawati* with various levels of *jilid*. To evaluate the increase in jilids, the assessment of *jilid* one to *jilid* six were carried out on the same day. Assessment variables to determine the increase in jilid consisted of *makhorijul huruf, sifatul huruf, ahkamul mad waqoshr, murotul huruf wal harokat*, and *murotul kalimat wal ayat*. *Makhorijul huruf, sifatul huruf*, and *ahkamul mad wal qoshr* belonged to the *Tajwid* assessment. *Murotul huruf wal harokat* and *murotul kalimat wal ayat* were in *Fashohah* assessment.

With a limited *ustadz* and a large number of students and assessment variables in assessing the *jilid* promotion, it took quite a lot of time. During the assessment, sometimes errors occurred due to the limited time and accuracy. The lack of time and accuracy of the *ustadz* makes the assessment less optimal. With the current process, the *jilid* promotion report was not stored properly. Using technology, data management of Darul Falah Lamandau Foundation's *tilawati jilid* promotion would be more effective. Included in the technology application is the computational assessment using the decision-making system method (Decision Support System), one of which is the Profile Matching method. The application aimed to solve the problem in the *tilawati jilid* promotion of the Darul Falah Lamandau Foundation.

Research conducted by Mokhamad Ramdhani stated that Profile Matching helped to make decisions on the results of the final exam assessment used as an assessment reference **[4]**. In line with this, the research by Muhammad Fauzi claimed that the use of Profile Matching method helped lecturers be fairer in assessing according to contributions and what was done

by the students **[5]**. These two studies proposed that Profile Matching method was suitable for decision making. In the previous studies, the method helped decision makers create an assessment of several assessment variables. to the method matched the problem of Darul Falah Lamandau Foundation, which assessed the *tilawati jilid* promotion, where several variables took part in the assessment. Given the suitability of the problems faced with the method used by the previous research, the concept of Profile Matching method was then applied to determine the tilawati jilid promotion. This system contained the students, *ustadz*, and assessment variables data. In addition, the *ustadz* can also assess it and save the report. With the implementation of this system, it was expected that the data processing, assessment, and management of *jilid* promotion reports of Darul Falah Lamandau Foundation more effective.
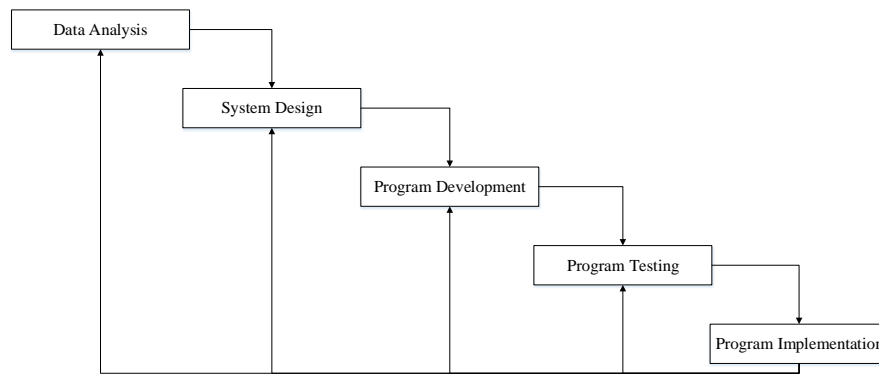
## 2.    Method

### a.    Material

Information technology grows rapidly along with the decision-making method. The development of this method makes researchers implement it to solve a problem. One method of decision-making system is Profile Matching. Profile Matching Method can overcome various issues. One of the implementations of Profile Matching method is to determine graduation **[6]**, **[7]**. In addition, the use of the method to decide majors **[8]** and select scholarships **[9]**, **[10]** have also been reported. Based on the previous studies, the implementation of Profile Matching is able to make an assessment based on certain criteria. For this reason, this study assessed the increase in the *tilawati jilid* promotion of the students by using Profile Matching method.

### b.    Method

The methodology implemented in this research consisted of data collection, system development, and methods for performing calculations. In collecting the data, interviews, literature studies, observations, and documentation based on the research title were done. In developing the system, the waterfall method was employed. The Waterfall method is a method that must be coherent in the process. The stages in the Waterfall method are Requirement Analysis, System Design, Implementation, Integration & Testing, and Operation & Maintenance **[11]**.

The waterfall method implemented consists of 5 stages, as presented in **Figure 1**.

**Figure 1.** Waterfall method

1) Data analysis is a step to analyze the needs of the system to build by identifying the problems to solve. The data collection consisted of observation, interviews, documentation, and a literature study. The problem of this study was managing student's data and making an assessment of the student's *jilid* promotion.

2) System design is the step of designing a system based on the solution of the problem. System design presents a model for solving problems, both designing data and designing systems using methods with the aim of solving problems. The method of this research is profile matching.

3) Program Development is working on the system in accordance with the design requirements at the analysis stage. In this study, Sublime Text to write web-based application programs was used.

4) Program testing is a step for testing the system that has been built. In this study, testing was carried out with the black-box technique and testing method.

5) Program implementation aims to ensure the system is able to operate properly, as well as repair or update the system based on the suggestions received.

In the calculation, the Profile Matching method was used. According to Kusrini, the profile matching method is a method that assumes that there are predictor variables that must be met, not the minimum level to be passed by the subject under study [5]. The steps for calculating the method using profile matching are as follows:

1) Determination of the required data variables [6]

2) Determination of the aspects needed in conducting the assessment [6]

3) Gap mapping profile [6]

$$GAP = Minimal\ Profile - Test\ data\ profile \tag{1}$$

4) Weighting

In the weighting, the value of each aspect is determined based on the weight of the gap. The Weighted GAP Value is presented in **Table 1 [12]**

**Table 1**. Weighted GAP Value

| Difference (GAP) | Weighted Value (Wj) | Information |
|:---:|:---:|:---|
| 0 | 5 | No GAP (Competency as needed) |
| 1 | 4,5 | Individual competence excess 1 level |
| -1 | 4 | Individual competence deficiency 1 level |
| 2 | 3,5 | Individual competence excess 2 level |
| -2 | 3 | Individual competence deficiency 2 level |
| 3 | 2,5 | Individual competence excess 3 level |
| -3 | 2 | Individual competence deficiency 3 level |
| 4 | 1,5 | Individual competence has excess of 4 levels |
| -4 | 1 | Individual competence lacks 4 levels |

Table 1 explains the weighting of the gap values  used as a guide in the calculation when assigning weighted values. The weighting of scores can be adjusted based on the problems and agreements. Therefore, the weighting of each issue can be different but still guided by the weighting table of the gap values.

5) Grouping of Core Factor and Secondary Factor **[12]**

In this step, the criteria are classified into core and secondary factors.

a) Core Factor

The core factor is an indispensable criterion, which was calculated using the following formula:

$$NCF = \frac{\sum NC}{\sum IC} \qquad (2)$$

Description:

NCF　　　　= Average value of core factor

NC　　　　= Total number of core factor values

IC　　　　= Number of core factor items

b) Secondary Factor

Secondary factor is a criterion that does not exist in the core factor. The calculation of the secondary factor used the following formula:

$$NSF = \frac{\sum NS}{\sum IS}$$

(3)

Description:

NCF = Average value of secondary factor

NC = Total value of secondary factor

IC = Number of items secondary factor

6) Total Value Calculation [12]

In this step, the total value of each aspect that has an impact on the performance of each calculated profile was calculated. The formula for calculating the total value is:

$$N = (X)\% \, NCF + (X)\% \, NSF$$

(4)

Description:

N = Total value of each aspect of

NCF = Average value of core factor

NSF = Average value of secondary factor

(X)% = Entered percentage value

7) Ranking [12]

In the ranking process, the ranking results were obtained from calculations with the following formula:

$$Ranking = (X)\% \, NK1 + (X)\% \, NK2$$

(5)

Description:

NK1 = Competency value 1

NK2 = Competency value 2

(X)% = Rank percentage value

## 3. Results and Discussion

## a. Calculation Implementation

Implementation of the Profile Matching method in this study has two aspects. Each of the aspects has a sub-aspect as an assessment variable. The following is the flow of the method:

1) Determining the data variables needed

The data variables needed in the research were grouped into criteria and sub-criteria. The criteria or aspects consisted of Fashohah criteria and Tajwid criteria. *Fashohah* Aspect and *Tajwid* Aspect are presented in **Table 2** and **Table 3**.

**Table 2.** Alternative *Fashohah* Aspect

| Name | Alternative | *Fashohah* **Aspect** | |
| --- | --- | --- | --- |
| | | *Murotul huruf wal harokat* | *Murotul kalimat wal ayat* |
| Dimas | S1 | Wrong 3 | Wrong 2 |
| Firman | S2 | Wrong 2 | Wrong 1 |
| … | … | … | … |
| Salman | S7 | Wrong 6 | Wrong 5 |

**Table 2** describes a sample of data errors made by students on the *Fashohah* criteria or aspect. The *Fashohah* aspect consisted of sub-aspects or sub-criteria, namely *Murotul huruf wal harokat* and *Murotul kalimat wal ayat*.

**Table 3.** Alternative *Tajwid* Aspect

| Name | Alternative | *Tajwid* **Aspects** | | |
| --- | --- | --- | --- | --- |
| | | *Makhorijul huruf* | *Sifatul huruf* | *Ahkamul mad wal qoshr* |
| Dimas | S1 | Wrong 2 | Wrong 3 | Wrong 2 |
| Firman | S2 | Wrong 3 | Wrong 3 | Wrong 3 |
| … | … | … | … | … |
| Salman | S7 | Wrong 5 | Wrong 4 | Wrong 6 |

**Table 3** describes a sample of data errors made by students on the Tajwid criteria or aspects. The Tajwid aspects consisted of sub-aspects or sub-criteria, namely *Makhorijul huruf, Sifatul huruf* and *Ahkamul mad wal qoshr*.

2) Determining the sub-aspects used to evaluate

Sub-aspects or sub-criteria in the research conducted consisted of *Murotul huruf wal harokat* and *Murotul kalimat wal ayat* for *Fashohah* aspects. In the *Tajwid* aspect, the sub-aspects were *Makhorijul huruf, Sifatul huruf,* and *Ahkamul mad wal qoshr*. The assessment of the *Fashohah* and *Tajwid* aspects are presented in **Table 4.**

**Table 4.** Assessment of the Fashohah Aspect

| Alternative | Sub-criteria/sub-aspect | Description | Value |
| --- | --- | --- | --- |
| A11, | *Murotul huruf wal harokat,* | no wrong | 5 |
| A12, | *Murotul kalimat wal ayat,* | wrong <=2 | 4 |
| A21, | *Makhorijul huruf,* | wrong 3 | 3 |
| A22, and | *Sifatul huruf,* and | wrong <=5 | 2 |
| A23 | *Ahkamul mad wal qoshr* | wrong => 6 | 1 |

**Table 4** describes the value of the sub-aspects of *Fashohah* and *Tajwid* aspects. The values in the sub-aspects are values based on agreement.

3) Gap Mapping

The Gap Mapping was done by calculating the difference between the minimum profile and the test data profile. The minimum profile was the standard value that had been set by Darul Falah Foundation. The test data profile was the value obtained by the students when taking the *jilid* promotion test. The Gap Assessment is presented in **Table 5.**

**Table 5.** Gap Assessment

| Alternative | *Fashohah* **Aspects** | | *Tajwid* **Aspects** | | |
| --- | --- | --- | --- | --- | --- |
| | *Murotul huruf wal harokat* | *Murotul kalimat wal ayat* | *Makhorijul huruf* | *Sifatul huruf* | *Ahkamul mad wal qoshr* |
| Dimas | 3 | 4 | 4 | 3 | 4 |
| Firman | 4 | 4 | 3 | 3 | 3 |
| … | … | … | … | … | … |
| Salman | 1 | 2 | 2 | 2 | 1 |
| Standard value | 4 | 3 | 4 | 3 | 4 |
| Dimas | -1 | 1 | 0 | 0 | 0 |
| Firman | 0 | 1 | -1 | 0 | -1 |
| … | … | … | … | … | … |
| Salman | -3 | -1 | -2 | -1 | -3 |

**Table 5** describes a gap assessment based on an assessment of the students with a predetermined standard value. This gap value was then used for calculations in the weighting step.

4) Weighting **[12]**

In the weighting step, what was done is to determine the weight for each Gap value that has been calculated in the previous step, to determine the weight of the value based on the existing weighting reference. The Aspects Weighting is presented in **Table 6.**

**Table 6.** Aspects Weighting

| Alternative | *Fashohah* **Aspects** | | *Tajwid* **Aspects** | | |
| --- | --- | --- | --- | --- | --- |
| | *Murotul huruf wal harokat* | *Murotul kalimat wal ayat* | *Makhorijul huruf* | *Sifatul huruf* | *Ahkamul mad wal qoshr* |
| Dimas | 4 | 4,5 | 5 | 5 | 5 |
| Firman | 5 | 4,5 | 4 | 5 | 4 |
| … | … | … | … | … | … |
| Salman | 2 | 4 | 3 | 4 | 2 |

Table 6 illustrates the weighting based on the previously calculated gap assessment. The weighting was done by giving the weight with the guide of the weighting table.

5) Grouping of Core Factor and Secondary Factor [12]

In this step, the aspects were grouped into core and secondary factors. In the research conducted, the Fashohah aspect as a Core Factor included Murotul huruf wal harokat and Murotul kalimat wal ayat. The Tajwid aspects as a Secondary Factor consisted of Makhorijul huruf, Sifatul huruf and Ahkamul mad wal qoshr. Values of CF and SF are presented in Table 7.

Table 7. Values of CF and SF

| Alternative | *Fashohah* Aspect | *Tajwid* Aspect |
|---|---|---|
| | CF | SF |
| Dimas | 4,25 | 5,00 |
| Firman | 4,75 | 4,33 |
| … | … | … |
| Salman | 3 | 3,00 |

Table 7 describes the results of the calculation of the Core Factor and Secondary Factor. The CF and SF values were then used in total value calculation.

6) Total Value Calculation [12]

In this step, the total value was calculated for each aspect that influenced each profile. The total value is presented in Table 8.

Table 8. The Total Value

| Alternative | *Fashohah* Aspect | *Tajwid* Aspect | Results |
|---|---|---|---|
| | CF | SF | |
| Dimas | 4,25 | 5,00 | 4,55 |
| Firman | 4,75 | 4,33 | 4,58 |
| Luthfi | 4,75 | 4,83 | 4,78 |
| Kurniawan | 4,25 | 4,00 | 4,15 |
| Irsyad | 4 | 3,50 | 3,80 |
| Cantika | 3,5 | 3,00 | 3,30 |
| Salman | 3 | 3,00 | 3,00 |

Table 8 describes the total value or calculation result. The total value was obtained from the sum of 60% Core Factor and 40% Secondary Factor.

7) Ranking [12]

The final results and ranking are presented in Table 9.

**Table 9.** Final Results and Ranking

| Alternative | Final Results | Ranking | Information |
|---|---|---|---|
| Luthfi | 4,78 | 1 | Increased |
| Firman | 4,58 | 2 | Increased |
| … | … | … | … |
| Salman | 3,00 | 7 | Improvement |

Table 9 describes the results, ranking, and description of the assessment. Based on the assessment, five alternatives or students got *jilid* promotion and two had to improve their ability. It was concluded that the *jilid* promotion was done based on the student's value, not the ranking. If a student got a score of more than or equal to 3.50, the student was declared to get *jilid* promotion. Meanwhile, the students were declared to do improvement if they got a score of less than 3.50, and students were declared to repeat if they got a score less than or equal to 2.00.

b.  **System Implementation**

The result of system implementation is the implementation of the system in this research.

1)  Assessment data page

The assessment page is presented in **Figure 2.**



**Figure 2.** The Assessment Page

Figure 2 displays the assessment page based on the assessment data and profile matching calculations. On the assessment page view, the assessment results were according to the steps of profile matching. The results of this assessment then became an assessment report.

2)    Assessment report page

The assessment report page is presented in **Figure 3.**
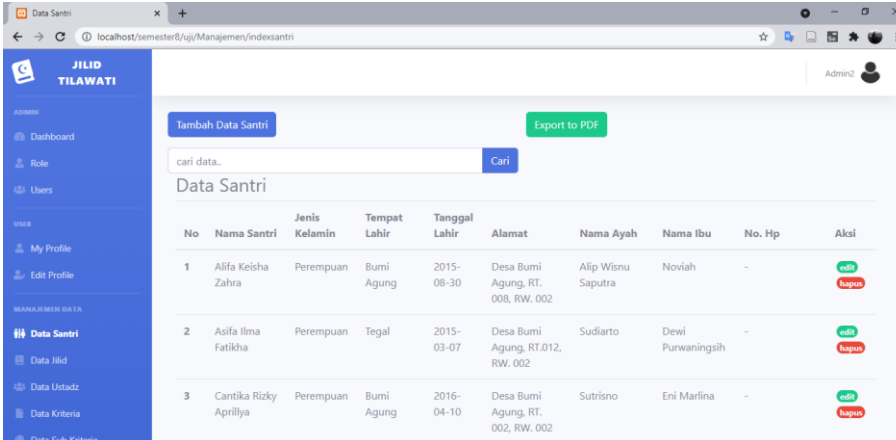


**Figure 3.** The assessment report page

The assessment report contains the name of the students along with the values and information of the students, whether they got the promotion or not.

3)    Student data page

The student data page is presented in **Figure 4.**



**Figure 4.** The student data page

**Figure 4** is a page displaying student's data at Darul Falah Lamandau Foundation. On this page, the admin has access to add, change, and delete the data. If the admin wants to export the data to pdf form, they can click "Export to PDF".

4) Student data report page

The student data report page is presented in **Figure 5.**



**Figure 5.** The student data report page

**Figure 5** is a page containing student data reports at Darul Falah Lamandau Foundation. If the admin wants to download it, they can click the "download" button. If they want to print it, they can click the "print" button.

5) *Ustadz* data page

The *ustadz* data page is presented in **Figure 6.**



**Figure 6.** The *Ustadz* data page

**Figure 6** is a page displaying the *ustadz's* data at Darul Falah Lamandau Foundation. On this page, the admin has access to add, change, and delete the student's data. If the admin wants to export the data to pdf form, they can click "Export to PDF".

6) Ustadz data report page

The ustadz data report page is presented in **Figure 7.**



**Figure 7.** The *Ustadz* data report page

**Figure 7** is a page containing the *Ustadz* data report at Darul Falah Lamandau Foundation. To download it, click the "download" button. To print it, click the "print" button.

## c.   Testing Result

In this study, functional testing with black-box and method testing with accuracy calculations were carried out. The black-box testing was by testing the the software functionality, not the existing structures within the software. The tests were carried out by testing all usability of the application by the user. Meanwhile, method testing was by testing the application of the calculation method on the system. This study performed calculations on seven samples. The test was by comparing the original data with the results, of which comparison of the test data is in **Table 10.**

**Table 10.** Comparison of test data

| Name of student | Status | | Description |
|---|---|---|---|
| | **Original data** | **Data from the system** | |
| Muhammad Luthfi Alfatih | Get promotion | Get promotion | correct test data |
| Firman Dwi Saputra | Get promotion | Get Promotion | correct test data |
| … | … | … | … |
| Salman Al Farizi | Need improvement | Need improvement | correct test data |

**Table 10** presents data comparison carried out during testing on the seven data of the original data and those of the system. Data are declared accurate when the system's results and the original data have the same results. The results of comparison calculations obtained seven accurate data.

$$\text{Accuracy (\%)} = \frac{\sum \text{Test data is correct}}{\sum \text{Total test data}} \; X \; 100\%$$ [13](6)

$$\text{Accuracy (\%)} = \frac{7}{7} \; X \; 100\% = 100\%$$ (7)

From the accuracy test conducted on the 7 data samples, an accuracy rate of 100% was obtained.

## 4.    Conclusion

Information technology is growing rapidly with the decision-making system method. The development of this method makes researchers choose to implement it to solve a problem. The Profile Matching method is one of the decision-making systems. The profile matching method in this study was beneficial for calculating values with the standard values. The default value in the calculation was predefined. The assessment was carried out based on the steps of the profile matching method to get the final result, ranking and information. By using the Profile Matching method, the results obtained were five students promoted to the next *jilid* and two students had to improve their ability. In the accuracy test, seven test data were employed based on the original test data and system test data. Based on the comparison, seven data had the same results as the original data. So, based on the calculation of accuracy, it obtained an accuracy rate of 100%.

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