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(Regular Edition)

4th INTERNATIONAL CONFERENCE ON RESEARCH, IMPLEMENTATION AND EDUCATION OF MATHEMATICS AND SCIENCE (4th ICRIEMS)

Yogyakarta, 14 – 16 May 2017

Research And Education For
Developing Scientific Attitude
In Sciences And Mathematics

Faculty of Mathematics and Science
Yogyakarta State University

Proceedings of the 4th ICRIEMS (Regular Edition)

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Preface

This is the regular edition (non-Scopus-indexed) of the proceedings of the 4th International Conference on Research, Implementation, and Education of Mathematics and Sciences (ICRIEMS) held by the Faculty of Mathematics and Science, Yogyakarta State University, Indonesia on 14 – 16 May 2017. All of the papers in this proceeding are obtained from a selection process by a team of reviewers and had already been presented in the conference. Some selected papers from the conference were compiled under separate proceedings and published by the American Institute of Physics (AIP). This proceedings comprises 9 fields, that is mathematics, mathematics education, physics, physics education, chemistry, chemistry education, biology, biology education, and science education.

The theme of this 4th ICRIEMS is '*Research And Education For Developing Scientific Attitude In Sciences And Mathematics*'. The main articles in this conference are given by six keynote speakers, which are Dr. Jean W.H. Yong (University of Western Australia & Curtin University), Assoc. Prof. Khajornsak Buaraphan, Ph.D. (Mahidol University, Thailand), Prof. Maitree Inprasitha, Ph.D. (Khon Kaen University, Thailand), Prof. Dr. Zuhdan Kun Prasetyo, M.Ed. (Yogyakarta State University, Indonesia), Dr. Liem Peng Hong (NAIS Co. Inc., Japan), and Assoc. Prof. Dr. Nor Azowa Ibrahim (Universiti Putra Malaysia). Besides the keynote and invited speakers, there are also parallel articles that present the latest research results in the field of mathematics and sciences, and the education. These parallel session speakers come from researchers from Indonesia and abroad.

Hopefully, this proceeding may contribute in disseminating research results and studies in the field of mathematics and sciences and the education such that they are accessible by many people and useful for the development of our civilization.

Yogyakarta, June 2017

Editorial Team

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Forewords by Head of Committee of the 4th ICRIEMS 2017

Assalamu'alaikum warahmatullahi wabarakatuh

May peace and God's blessings be upon you all

First of all, on behalf of the organising committee of the 4th ICRIEMS let me welcome you to Yogyakarta State University, Indonesia. This International Conference on Research, Implementation, and Education of Mathematics and Science which is organized by the Faculty of Mathematics and Science is dedicated to the 53rd anniversary of Yogyakarta State University. The theme of this conference is "Research and Education for Developing Scientific Attitude in Science and Mathematics".

This conference facilitates academics, researchers and educators to publish and disseminate their research findings in the fields of pure, application and education of Science and Mathematics. We hope that this conference enable us to establish and maintain cooperation, communication, and networking among academics, researchers and educators in the levels of both national and international.

The succes of this conference depends not only on the committe but also on the the other parties. Therefore, in this occasion I would like to express my highest appreciation and gratitude to the following keynote speakers and invited speakers.

Keynote speakers:

1. Dr. Jean WH Yong - University of Western Australia & Curtin University (Biology);
2. Assoc. Prof. Khajornsak Buaraphan, Ph.D. - Mahidol University, Thailand (Science);
3. Assistant Prof. Maitree Inprasitha, Ph.D. - Khon Kaen University, Thailand (Mathematics Education);
4. Prof. Dr. Zuhdan Kun Prasetyo, M.Ed. - Yogyakarta State University, Indonesia (Physics Education);
5. Dr. Liem Peng Hong - Nippon Advanced Information Service (NAIS Co.,Inc), Japan (Physics);
6. Associate Profesor Dr. Nor Azowa Ibrahim - Universiti Putra Malaysia, Serdang (Chemistry)

Invited speakers:

1. Prof. Muthuraaman (Madras University, India)
2. Prof. Pipat Chooto (PSU Thailand)
3. Dr. Azlan Kamari (UPSI Malaysia)

4. Beni Setiawan, M.Pd. (UNESA)

5. Prof. Dr. Abdullah Dolah Dalee (Yala Rajabhat University, Thailand)

6. Prof. Dr. Eddy Hermawan (LAPAN Indonesia)

7. Dr. Hongki Julie (USD Yogyakarta)

Furthermore, allow me to inform you that the number of papers to be presented in this conference is about 304 papers out of 400 applicants from six countries, i.e. Australia, Indonesia, India, Japan, Malaysia, and Thailand. There are more or less 130 selected papers will be published by AIP Publisher which is Scopus Indexed. The rest of the papers will be published on selected DOAJ Journals and Regular ICRIEMS Proceeding. Therefore, we address very big appreciation and many thanks to all presenters and participants who have been actively involved in this seminar. Without your participation, we – the committee – are nothing.

Finally, I would like to say thank you very much to all members of the committee who have been working very hard since November last year in order to ensure the success of this conference. However, nothing is perfect, of course except the God, so if you find any shortcomings and inconveniences in this conference, we really apologize, indeed. We hope that this conference will be very succesful. Have a nice conference and enjoy Yogyakarta

Thank you very much.

Wassalamu'alaikum warahmatullahi wabarakatuh.

Yogyakarta, May 2017

Drs. Joko Sudomo, MA

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Forewords by Dean of Faculty of Mathematics and Sciences Yogyakarta State University

Assalamu'alaikum warahmatullahi wabarakatuh

May peace and God's blessings be upon you all.

On behalf of the Organizing Committee, first of all allow me to extend my warmest greeting and welcome to the 4th International Conference on Research, Implementation, and Education of Mathematics and Sciences 2017, held in Yogyakarta State University, one of the qualified education universities in Indonesia.

To celebrate the 53rd Anniversary of Yogyakarta State University, our faculty, has an opportunity to conduct the 4th ICRIEMS 2017 with the theme of Research and Education for Developing Scientific Attitude in Sciences and Mathematics. This conference proudly presents six keynote speeches by six fabulous speakers: Dr. Jean WH Yong, Assoc. Prof. Khajornsak Buaraphan, Ph. D., Assistant Prof. Maitree Inprasitha, Ph.D., Prof. Dr. Zuhdan Kun Prasetyo, M.Ed., Dr. Liem Peng Hong, and Associate Profesor Dr. Nor Azowa Ibrahim.

This conference is aimed to pull together researchers, educators, policy makers, and practitioners to share their critical thinking and research outcomes. Therefore, we are able to understand and examine the development of fundamental principle, knowledge, and technology. By perceiving the matters and condition in research and education field of mathematics and sciences, we could take a part in conducting qualified education to reach out the real independence of our nation.

This conference will be far from success and we could not accomplish what we do without the support from various parties. So let me extend my deepest gratitude and highest appreciation to all committee members. I would also like to thank each of participants for attending our conference and bringing your expertise to our gathering. Should you find any inconveniences and shortcomings, please accept my sincere apologies.

To conclude, let me wish you a fruitful discussion and a very pleasant stay in Yogyakarta.

Wa'alaikumsalam warahmatullahi wabarakatuh

Yogyakarta, May 2017

Dr. Hartono

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Forewords by Rector of Yogyakarta State University

Assalamu'alaikum warahmatullah wabarakatuh.

May peace and God's blessings be upon all of us.

Education is in Indonesia has long been an object of criticism. Mathematics and Science Education, in particular, has been considered pretty low in terms of international ranks. In reports released by Program for International Student Assessment (PISA), for example, the students' mathematics achievement were very low, that was rank 66 0f 72 countries in 2015. Although it improved when compared to the rank released in 2012 – rank 71 of 72 countries, it is still far behind the other countries, even from Thailand (56), Malaysia (45), Vietnam (22), and Singapore (1). Science is not much better when referring to PISA report. Indonesian students Science achievement was only slightly better than that of Mathematics. In addition, many students consider Mathematics and Science among the most difficult and scary school subjects. Many students feel depressed because they have Math in the schedule, or would rather escape, when it is possible.

Such a condition is not ideal and should be a significant consideration for Mathematics and science teachers, lecturers and researchers to devote more works to improve the quality of not only students' mathematics achievement, but also leaning processes. It is through The 4th International Conference on Research, Implementation and Education of Mathematics and Science (4th ICRIEMS), that we expect to find solution to the problems. The 4th ICRIEM brings together teachers, lecturers, researchers, and practitioners in Mathematics and Science Education to sit together, discuss, and share their experiences, research findings, and ideas to make better practices and innovations in Mathematics and Science Education, and thus improve students learning and achievement.

Yogyakarta State University (Universitas Negeri Yogyakarta), with its new leaderships, has high commitment and is highly determined to promote research and publications among the university members to help improve the quality of Mathematics and Science learning in particular, and the quality of education in general. Furthermore, with the commitment to lead to the World Class University, Universitas Negeri Yogyakarta strive to increase its impact on the education worldwide, by promoting research and publications to journals with international reputation. In addition, Universitas Negeri Yogyakarta with its new leaderships has launched a commitment to a transformative leadership by promoting transparency, participation, and collegiality. With this commitment, it is expected that Universitas Negeri Yogyakarta can contribute better in improving the educational system in particular, and the society in general.

Finally, appreciation and gratitude are for those who have been working hard to make this conference possible. I also hope that this conference be one of the conferences that really contribute to the upbringing of the scientific life.

Wassalamu'alaikum warrahmatullah wabarakatuh.

Yogyakarta, 15 May 2017

Prof. Dr. Sutrisna Wibawa, M. Pd.

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Evaluation Of Lecturer Performance For The Promotion Of Structural Position Using Profile Matching Method

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Abstract. *Problem which often happen in assessment of lecturer performance is subyective decision making, especially if some existing lecturer have close ability. Using decision support system is expected to increase objective in decision making. It's replaced by counting all of criteria to all lecturer, so that lecturer with the best ability will be chosen. Decision Support System by using Profile Matching (competency gap) conducted to determine the lecturer recommendation for promotion based on 3 aspects, that is Intellectual Aspect, Attitude aspect and Behavior aspect. The result of this process is lecturer's ranking. The best lecturer will be chosen to fulfill the empty position.*

INTRODUCTION

Everyone will be faced with a situation where they had to choose one or more options. Profile Matching Methods is a decision-making mechanisms by assuming that there is an ideal level of predictor variables that must be fulfilled by subject studied [2]. One application of this method is evaluation of lecturer performance for promotion of structural positions.

Decision Support System (DSS) is a computer-based of information system whose the main purpose is to help the decision-making utilizing data and models to solve semi-structured and unstructured problems [2]. DSS is designed to support all stages of decision making, which starts from identify the problem, choose the relevant data, determine the approach used in the decision making until evaluate alternative activities.

Purpose of this research is to produce a system that can be used for decision support system to get candidates who has the best lecturer profile as close as possible with ideal profil using Profile Matching Method so can increase the objectivity of decision making.

RESEARCH METHODS

This study is a qualitative research with case study design. Qualitative approach used in research to describe the use of profile matching in candidates selection of lecturer with the required qualification. The ability of lecturer in various aspects is quite difficult to obtain because of many factors. The right methods are needed in order to get highly accurate corresponding predetermined profile. Profile Matching Method would produce the corresponding rank. The instrument of this research consisted of observation and interview. Interview were conducted to lecturer and students at the university.

Recently, technologies dealing with the issue of resource integration between profiles are getting a growing attention. In this section we present a number of approaches and techniques that were used using Profile Matching Method: In [1], the authors address the problem of providing intersocial networks' operation and functionalities and particularly focus on the user profile matching. Their contribution in that paper is a matching framework able to consider all the profile's attributes. Their goal is to discover the biggest possible number of social profiles that refer to the same person between two social networks. In [7], profile matching means two users comparing their

personal profiles and is often the first step towards effective Profile matching social network. However, conflict with users growing privacy concerns about disclosing their personal profiles to complete stangers before deciding to interact with them. In [9], profile matching also can be used in MSN application that matches one with nearby people for dating, friend-making or small-talks based on common interest. In such application, a user only needs to input some attributes in her profile, and the system would automatically find the person around with similar profile [6]. In [3,8], they proposed a matching technique in which each user profile is represented as a vector consisting of the values of individual profile fields (e.g., name, date of birth, etc.).
This is flowchart to show the flowing of the research from input to output:

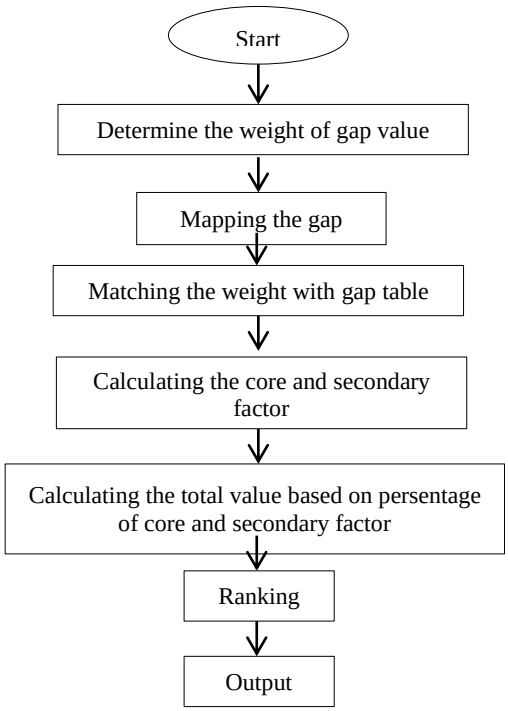

FIGURE 1. Flowchart the flowing of the research from input to output

The weight of gap value is is define below:

TABLE 1. WEIGHT OF GAP VALUE

No.	Difference of Gap	Gap Value	Information
1	0	5	No gap
2	1	4.5	Competence of individual excess 1 level
3	-1	4	Competence of individual less 1 level
4	2	3.5	Competence of individual excess 2 level
5	-2	3	Competence of individual less 2 level
6	3	2.5	Competence of individual excess 3 level
7	-3	2	Competence of individual less 3 level
8	4	1.5	Competence of individual excess 4 level
9	-4	1	Competence of individual less 4 level
10	5	0	Competence of individual excess 5 level

Core factor is the aspect most needed to get the optimal performance. The formula of core factor is:

$$NRC = \frac{\sum NC}{\sum IC}$$

NRC = average value of core factor in every aspect
NC = total value of core factor in every aspect
IC = sum of item in every aspect

Secondary factor is the aspect other than the core factor. The formula of secondary factor is:

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

NRS = average value of secondary factor in every aspect
NS = total value of secondary factor in every aspect
IS = sum of item in every aspect

After get the value of core factor and secondary factor, the next step is to calculate the total value based on persentage of core factor and secondary factor. Core factor is the dominant aspect that affect the performance assessment of each profile, while the secondary factor is not the dominant aspect of the assessment. In this study the percentage of core factor is 60% and the secondary factor is 40%.

Formula for total value are:

- Intelligent Aspect:

  $\mathrm{NAK} = 60\%(\mathrm{NRC}) + 40\%(\mathrm{NRS})$

- Attitude Aspect:

  $\mathrm{NASK} = 60\%(\mathrm{NRC}) + 40\%(\mathrm{NRS})$

- Behavior Aspect:

  $\mathrm{NAP} = 60\%(\mathrm{NRC}) + 40\%(\mathrm{NRS})$

With NRC is value of core factor and NRS is value of Secondary Factor.

The next step is to calculate ranking value. The final result of the profile matching method is obtained ranking from each candidate to fill the empty position.
Formula for ranking: $30\%\ (\mathrm{NAK}) + 30\%\ (\mathrm{NASK}) + 40\%\ \ (\mathrm{NAP})$
Where:
NAK = Total value of intelligent aspect
NASK = Total value of attitude aspect
NAP = Total value of behavior aspect

RESULT AND DISCUSSION

Below is the data on the classification of Core Factor and Secondary Factor:

TABLE 2. Classification of core factor and secondary factor

No.	Assessment Aspect	Core Factor	Secondary Factor
1.	Intelligent Aspect	1. Educated academic qualification at least S2	2.Understanding the national education system
		3. Lecturer's Research	5. Managerial and entrepeneurial competencies
		4. Having a functional position of Asisten Ahli	6. Maximum age 60 years old
2.	Attitude Aspect	1. Has an attitude of nurturing and motivating	2. Circumspection
		3. Has a reputation for academic and leadership	5. Has a good track record
		4. Can cooperate well with the team of lecturer	
3.	Behavior Aspect	1. Perseverance	3. Firmness
		2. Good integrity	4. Wise

Percentage of Core Factor is 40%, while percentage of Secondary Factor is 60% for each aspect. Percentage of intelligent aspect is 30%, attitude aspect is 30%, and behavior aspect is 40%. As for the assessment in this study using ordinal scale:

1. Very Less
2. Less
3. Enough
4. Good
5. Very Good

Calculation using Profile Matching Method described in this section from the calculation of weight for each aspect of the criteria to the calculation of the final value used in decision making. Calculation the weight of each aspect of the criteria described below.

a. Calculation of Weighting Every Aspect
   - The value of intelligent aspect:

TABLE 3. Value of intelligent aspect

No.	NIK	1	2	3	4	5	6
1	**0001**	5	4	4	3	2	4
2	**0002**	4	3	5	4	3	3
3	**0003**	4	3	5	4	3	2
4	**0004**	5	5	4	3	4	3
5	**0005**	4	4	3	3	4	5
6	**0006**	3	3	4	3	5	4
7	**0007**	2	5	4	4	3	3

   - The value of attitude aspect:

TABLE 4. Value of attitude aspect

No.	NIK	1	2	3	4	5
1	**0001**	3	4	4	5	5
2	**0002**	5	4	3	4	4
3	**0003**	2	4	5	3	3
4	**0004**	5	4	4	4	4
5	**0005**	3	3	5	5	5
6	**0006**	2	4	5	4	3
7	**0007**	5	3	2	4	4

   - The value of behavior aspect:

TABLE 5. Value of behavior aspect

No.	NIK	1	2	3	4
1	**0001**	5	4	4	3
2	**0002**	4	3	5	4
3	**0003**	5	4	4	5
4	**0004**	3	5	4	4
5	**0005**	4	4	4	4
6	**0006**	5	4	4	3
7	**0007**	3	3	5	4

From the weight calculation of each aspect of the criteria can be continued by the following competencies gap mapping calculation.

b. Calculation of Gap Competency Mapping.
   Gap competency mapping calculation generate weighting gap.
   - Table 6 is competency gap intelligent aspect. In this table we can get the gap from the value of intelligent aspect from Table 2 (value attribut) and value target. And the weight of gap value of intelligent aspect seen from the Table 6.

   - Table 7 is competency gap attitude aspect. In this table we can get the gap from the value of attitude aspect from Table 3 (value attribut) and value target. And the weight of gap value of attitude aspect seen from the following table.

TABLE 6. Competency gap intelligence aspect

No.	NIK	1	2	3	4	5	6
1	**0001**	5	4	4	3	2	4
2	**0002**	4	3	5	4	3	3
3	**0003**	4	3	5	4	3	2
4	**0004**	5	5	4	3	4	3
5	**0005**	4	4	3	3	4	5
6	**0006**	3	3	4	3	5	4
7	**0007**	2	5	4	4	3	3
Ideal Profil		**4**	**3**	**4**	**4**	**4**	**3**
1	**0001**	1	1	0	-1	-2	1
2	**0002**	0	0	1	0	-1	0
3	**0003**	0	0	1	0	-1	-1
4	**0004**	1	2	0	-1	0	0
5	**0005**	0	1	-1	-1	0	2
6	**0006**	-1	0	0	-1	2	1
7	**0007**	-2	2	0	0	-1	0
Weight of Gap Value							
1	**0001**	4.5	4,5	5	4	3	4,5
2	**0002**	5	5	4,5	5	4	5
3	**0003**	5	5	4,5	5	4	4
4	**0004**	4,5	3,5	5	4	5	5
5	**0005**	5	4,5	4	4	5	3,5
6	**0006**	4	5	5	4	3,5	4,5
7	**0007**	3	3,5	5	5	4	5

Gap

TABLE 7. Competency gap attitude aspect

No.	NIK	1	2	3	4	5
1	**0001**	3	4	4	5	5
2	**0002**	5	4	3	4	4
3	**0003**	2	4	5	3	3
4	**0004**	5	4	4	4	4
5	**0005**	3	3	5	5	5
6	**0006**	2	4	5	4	3
7	**0007**	5	3	2	4	4
Ideal Profil		**4**	**4**	**5**	**4**	**3**
1	**0001**	-1	0	-1	1	2
2	**0002**	1	0	-2	0	1
3	**0003**	-2	0	0	-1	0
4	**0004**	1	0	-1	0	1
5	**0005**	-1	-1	0	1	2
6	**0006**	-2	0	0	0	0
7	**0007**	1	-1	-3	0	1
Weight of Gap Value						
1	**0001**	4	5	4	4,5	3,5
2	**0002**	4,5	5	3	5	4,5
3	**0003**	3	5	5	4	5
4	**0004**	4,5	5	4	5	4,5
5	**0005**	4	4	5	4,5	3,5
6	**0006**	3	5	5	5	5
7	**0007**	4,5	4	2	5	4,5

Gap

- Table 8 is competency gap behavior aspect. In this table we can get the gap from the value of behavior aspect from Table 5 (value attribut) and value target. And the weight of gap value of behavior aspect seen from the following table.

TABLE 8. COMPETENCY GAP BEHAVIOR ASPECT

	No.	NIK	1	2	3	4
	1	**0001**	5	4	4	3
	2	**0002**	4	3	5	4
	3	**0003**	5	4	4	5
	4	**0004**	3	5	4	4
	5	**0005**	4	4	4	4
	6	**0006**	5	4	4	3
	7	**0007**	3	3	5	4
	Ideal Profil		**4**	**4**	**5**	**5**
Gap	**1**	**0001**	1	0	-1	-2
	2	**0002**	0	-1	0	-1
	3	**0003**	1	0	-1	0
	4	**0004**	-1	1	-1	-1
	5	**0005**	0	0	-1	-1
	6	**0006**	1	0	-1	-2
	7	**0007**	-1	-1	0	-1
	Weight of Gap Value					
	1	**0001**	4,5	5	4	3
	2	**0002**	5	4	5	4
	3	**0003**	4,5	5	4	5
	4	**0004**	4	4,5	4	4
	5	**0005**	5	5	4	4
	6	**0006**	4,5	5	4	3
	7	**0007**	4	4	5	4

c. Calculation of Core Factor and Secondary Factor

After obtained the weighting value of each aspect of the criteria, next step is the calculation of Core Factor and Secondary Factor, also obtained the total value for each lecturer

- Table 9 show the core factor and secondary factor of intelligent aspect from competency gap in Table 6. The criteria of core factor are: educated academic qualification at least S2, lecturer's research, and having a functional position of asisten ahli. The criteria of secondary factor are: understanding the national education system, managerial and entrepeneurial competencies, and maximum age 60 years old. The total value is average between core factor and secondary factor.

TABLE 9. Core factor and secondary factor intelligent aspect

No.	NIK	Core Factor	Secondary Factor	Total Value
1	**0001**	4,5	4	4,3
2	**0002**	4,8	4,6	4,72
3	**0003**	4,8	4,3	4,6
4	**0004**	4,5	4,5	4,5
5	**0005**	4,3	4,3	4,3
6	**0006**	4,3	4,3	4,3
7	**0007**	4,3	4,2	4,26

- Table 10 show the core factor and secondary factor of attitude aspect from competency gap in the Table 7. The criteria of core factor are: has an attitude of nurturting and motivating, has areputation for academic and leadership, can cooperate well with the team of lecturer. The criteria of secondary factor are: circumspection, and has a good track record. The total value is average between core factor and secondary factor.

TABLE 10. Core factor and secondary factor attitude aspect

No.	NIK	Core Factor	Secondary Factor	Total Value
1	**0001**	4,2	4,25	4,22
2	**0002**	4,2	4,75	4,42
3	**0003**	4	5	4,4
4	**0004**	4,5	4,75	4,6
5	**0005**	4,5	3,75	4,2
6	**0006**	4,3	5	4,58
7	**0007**	3,8	4,75	4,18

- Table 11 show the core factor and secondary factor of behavior aspect from competency gap in the Table 8. The criteria of core factor are: perseverance and good integrity. The criteria of secondary factor are: firmnessand wise. The total value is average between core factor and secondary factor.

TABLE 11. Core factor and secondary factor behavior aspect

No.	NIK	Core Factor	Secondary Factor	Total Value
1	**0001**	4,75	3,5	4,25
2	**0002**	4,5	4,5	4,5
3	**0003**	4,75	4,5	4,65
4	**0004**	4,25	4	4,15
5	**0005**	5	4	4,6
6	**0006**	4,75	3,5	4,25
7	**0007**	4	4,5	4,2

d. Determine Ranking
- Ranking in table 12 are from the total value of three aspect in Table 9, Table 10, and Table 11.

TABLE 12. Calculation of total value

No.	NIK	Total Value Intelligent Aspect	Total Value Attitude Aspect	Total Value Behavior Aspect	Ranking
1	**0001**	4,3	4,22	4,25	4,26
2	**0002**	4,72	4,42	4,5	4,536
3	**0003**	4,6	4,4	4,65	**4,56**
4	**0004**	4,5	4,6	4,15	4,39
5	**0005**	4,3	4,2	4,6	4,39
6	**0006**	4,3	4,58	4,25	4,36
7	**0007**	4,26	4,18	4,2	4,2

In the calculation of final result is affected by determination the percentage of each aspect. The resulting output from calculation is the highest to lowest ranking for each lecturer. Result of the highest rank will be recemmended to fulfill the structural position.

CONCLUSION

From the explanation of the result from this study can be deduced as follows:

1. Decision Support System can help campus to know lecturer achievement seen from the percentage value ranking.
2. This method can provide solution to get the best lecturer to fill the structural position
3. Table 12 shows that lecturer with NIK 0003 has the highest ranking among another lecturer. It means that lecturer with NIK 0003 has nearest value attribut with value ideal. So that lecturer can be promoted to fulfill the empty position.

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