

DEVELOPMENT OF SIMPLE, EASY AND INEXPENSIVE ONLINE SYSTEM FOR LIST OF PROPOSAL ASSESSMENT CREDIT SCORE OF WIDYAISWARA

Sri Mahendra Satria Wirawan

Badan Pengembangan Sumber Daya Manusia Provinsi DKI Jakarta

*Corresponding Author: mahendrawirawan@gmail.com

ABSTRACT

The current process of proposing and calculating credit number for Widyaiswara is felt to require an exceedingly difficult effort. Many costs must be incurred, especially to hold office stationery such as printing equipment, paper, ink, binder clips, and others. The next issue is how to provide a relatively large number of proposal files and a place for verification and evaluation. After the research is finished, the problem arises again when it will destroy the documents that have been examined. This condition causes waste generation which is not environmentally friendly. An alternative solution for this is to use an online system of calculating credit numbers. However, the development and use of online system applications require considerable development, maintenance, and development costs. This research was carried out with the aim of develop applications that can be used in the context of managing the proposal and calculation of lecturer credit score which are simple and can be used easily and cheaply by people using unpaid software with various facilities or features. Based on research conducted using combine method between Microsoft Excel software with several software that provides unpaid facilities, a credit score calculation system application can be built for Widyaiswara that is simple, easy, and inexpensive. The results of trials conducted on the calculation of Widyaiswara BPSDM credit figures in DKI Jakarta Province gave very satisfying results, especially on increasing the speed of time and accuracy of proposals and assessments.

Keywords: credit score, online system, simple, easy, inexpensive.



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INTRODUCTION

Based on the Regulation of the Minister of State Apparatus Empowerment and Bureaucratic Reform Number 22 Year 2014 concerning the Functional Position of Widyaiswara and Credit Score [1], it is said that the Functional Position of Widyaiswara is a position that has the scope of duties, responsibilities, authority, and rights to carry out educational, teaching, training or activities, which is often abbreviated as Civil Servant Education and Training, Evaluation and Development of Education and Training, hereinafter referred to as Education and Training in Government Education and Training Institutions.

If it is not managed properly, filing proposals and other supporting documents can become a problem, namely loss of archives or damaged archives [2]. In its implementation, problems often arise that can hinder the process of proposing and calculating credit numbers. In order to obtain a credit score for each element of the assessment, Widyaiswara must attach quite a number of

proposed and supporting documents. If the document is printed, it will require a lot of office stationery (ATK), such as printers, paper, ink, binder clips, and others. After Widyaiswara submits his proposal file, the problem will move to the Assessment Team. Considering the large number of documents that must be checked, a representative room is needed to place and examine the proposed documents, because if the supporting documents are not neatly arranged and placed in a separate room, the Assessment Team will experience difficulties in searching and examining supporting documents for the credit score proposal. The large number of supporting documents caused the lengthy process for the credit score assessment to be carried out, because the Assessment Team had to look at the suitability of obtaining credit numbers and supporting documents one by one, so it took a long time to process them. In addition, a special room is also required for the purposes of file security and the independence of the examiner. Another problem that will also arise after completing the examination

is that the document files will be destroyed and discarded. This of course will make a lot of the proposed files as waste or garbage that is not environmentally friendly.

Taking into account the background of the provisions that must be applied as well as the problems in calculating the credit score carried out manually, it is necessary to have a method based on information technology for proposing and calculating Widyaiswara's credit score which can also assist the process of increasing Widyaiswara's rate [3]. In recent years, the State Administration of the Republic of Indonesia (LAN RI) has implemented an application for proposing a List of Proposed Credit Score Assessments (<http://siwi.lan.go.id/>) [4], where Widyaiswara no longer needs to submit documents in the form of printed documents (hard copy), but submitted in the form of an electronic document (soft copy) through an online system application. However, this condition can only be applied to Associate Expert Widyaiswara with rank VI-c and above. Meanwhile, Widyaiswara with the ranks and positions below are still carried out in the respective institutions, both central and regional and most of them use manual methods and have not used online applications, on the grounds that they have not mastered information technology and are currently exacerbated by the conditions of the Covid 19 pandemic which caused all government agencies face significant budget rationalization. Not many agencies have used the online a list of proposed credit score application, only a few have used it, including BPSDM Ministry of Energy and Mineral Resources (<https://alistofproposedcreditscorebpsdm.esdm.go.id/auth/login>) [5], PPSDM Agency of the Ministry of Health (<http://202.70.136.161:8087/alistofproposedcreditscorewi/>) [6] and Puslatan Ministry of Agriculture (<http://functional.pertanian.go.id/>) [7].

Given the large number of calculation formulas needed for proposing and calculating the Widyaiswara credit score, the development of the a list of proposed credit score online system application technically has a high level of difficulty and requires expert program makers who are competent in the field of online-based information systems. Besides that, from a budget perspective, the preparation of an online A list of proposed credit score system application requires a significant budget both during its development and operation.

For this reason, it is necessary to develop an online duplicate proposal system that is simple and requires special hardware and software, can be done by anyone, and uses the many resources available on the website at a relatively low cost because some can

be accessed for free. The aim is to build an application that can be used for the management of proposals and calculation of lecturer credit numbers that can be developed and used easily and cheaply by anyone even though they do not have a background in information systems expertise, because they use software that is already available in various feature facilities that have been provided. In addition, this system can also be used as a means of developing lecturer competence in facing the industrial era 4.0 based on information technology to be developed in the form of applications for the needs of carrying out other tasks.

METHOD

The system application was developed based on the provisions in the Regulation of the Head of the State Administration Agency Number 26 of 2015 concerning Guidelines for Assessing the Functional Position of Widyaiswara Credit [8], which was carried out at the Human Resources Development Agency (BPSDM) of DKI Jakarta Province from March to May 2020 and trials were carried out for proposing and calculating credit score for BPSDM Associate Expert Widyaiswara in DKI Jakarta Province with rank VI-b and below for the session period in July 2020.

The main software used for calculating credit figures is Microsoft Excel, which is a very good data processing software for calculating various purposes. This application is a great program at solving problems in all areas. This can be seen from the availability of various categories of functions and facilities which are always being refined and encouraging us to study them. The more we learn, the more challenges and of course the more it opens up our insights that with Microsoft Excel, we can do many things that are needed now and in the future [9].

In developing this system, Microsoft Excel software is used which has a license from Microsoft 365 (<https://www.microsoft.com/id-id/microsoft-365>) [10], but it is possible to use an earlier version. OneDrive system cloud service is used to store data (<https://www.microsoft.com/en/microsoft-365/one-drive/online-cloud-storage>) [11] which allows users to upload and sync files to a system cloud storage and then access them via specific website or device. OneDrive with limited capacity can be accessed through a Microsoft account free of charge. However, if you use a Microsoft 365 license you will get a larger additional capacity. To build a credit score proposal website, software from WordPress (<https://id.wordpress.com/>) [12], is used as software that can be used to create websites easily, has free

access and can be used without having to understand programming languages.

For physical evidence data of the implementation of the task, the proposer Widyaiswara must digitize the data by transferring data media from printed form to digital form. To create a document archive in digital form, printed documents are converted into digital form by scanning the document and changing the PDF file format. Digitizing physical evidence of list of proposed credit score of Widyaiswara needs to be done by considering the number of documents in A list of proposed credit score that must be assessed. Furthermore, the PDF physical evidence files are stored in Google Drive (<https://www.google.com/intl/id/drive/>) [13], each proposer so that it does not burden the system memory. Good file administration on Google Drive is needed so that it is easy to find for sharing by linking the URL of a physical proof PDF file which will be inputted into the Microsoft Excel format available on the Widyaiswara Online A list of proposed credit score System.

WordPress has a feature to link or link various documents from outside so that it does not burden the limited memory provided for features that are not paid for. In order to provide protection and access restrictions for the Dupak online system application, WordPress has secure access protection using a password. Additional access security is done by using password generation access on thinfi (<https://thinfi.com/>) [14]. Shortening the Unifrom Resource Locator (URL) which is a series of characters according to a certain standard format to show the address of a source, for example, such as documents, files and images on the internet, besides using thinfi, bitly is also used (<https://bitly.com/>) [15].

The information system is an amalgamation of several structured elements consisting of humans, hardware, software, communication networks, data and information sources, as well as procedures and policies in storage, retrieval, change and dissemination in an institution's environment [16]. The World Wide Web is or what is also known as the web is a system related to documents used as a medium for displaying text, images, multimedia and others on the internet network.

This system was built with the concept of building a system application for proposing and calculating Widyaisawara's credit score which is simple, easy and inexpensive, but has sufficient strength to carry out an information system-based process that can be accessed via the web. The development process follows the software

development cycle as a method for designing, building, and maintaining information with the Waterfall model developed by Royce (1970) [17] which is used to describe possible software engineering practices that define several sequences of stages that must be completed one by one, where before move to the next stage, the previous stage has been completely completed. For this reason, Waterfall is a recursive model, that is, a model that has a function that can call itself directly or not, where the process of calling is called recursion, so that each stage can be repeated endlessly until the model becomes perfect. The sequence of the system development process with the waterfall method follows a downward flowing flow, where in principle this model consists of the stages of analysis, design, implementation, testing and maintenance [18] as shown in Figure 1 below.

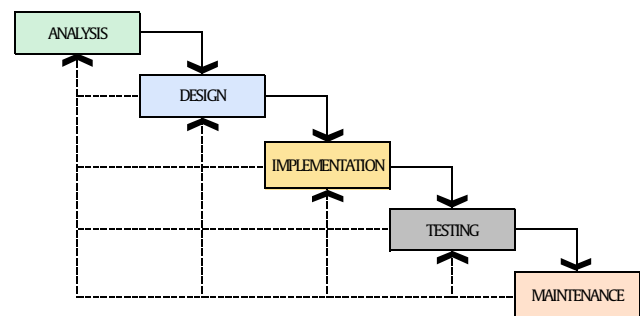


Figure 1. Various stages of the Waterfall model.

In the analysis stage, identification of the provisions stipulated in the Regulation of the Head of the State Administration Agency Number 26 of 2015 concerning Guidelines for Evaluating the Functional Position of Widyaiswara Credit Score and determining specifications for software requirements is complete and comprehensive, including defining functional and non-functional requirements. The functional requirements are defined as the ease of interaction between the Proposer and the Assessment Team as users with software that has been mastered and is commonly used in carrying out daily tasks, such as the use of Microsoft Excel data processing software. On the other hand, non-functional requirements refer to various criteria related to providing alternative solutions to the obstacles or difficulties that will be faced, limitations of use which are only for the purpose of assessing a limited credit score of Widyaiswara of BPSDM of DKI Jakarta Province, and other requirements.

Then the design stage is carried out as a planning process by identifying alternative solutions to software problem solving. The design built

includes 1) algorithm design in accordance with the calculation formula required in calculating the credit score of various different assessment elements using the template format in Microsoft Excel, 2) design software architecture, 3) conceptual database schema by utilizing data storage in OneDrive as one of Microsoft's features that can be utilized free of charge, 4) simple interface design using free facilities from WordPress that can be seen and accessed by users.

After completing the design, it is followed by the Implementation stage which refers to the realization of the requirements and design specifications into a program. The database built with Microsoft Excel is stored in the OneDrive cloud system linked to the WordPress website for operation and deployment. While data related to physical evidence for credit score assessments requires a large amount of memory, to save storage space, physical evidence data is stored in Google Drive in the account of each applicant which is linked in the Microsoft Excel proposal file. Besides that, other assistive software is also used to provide protection for data so that it cannot be accessed by unauthorized data using Thinfi to be able to create passwords and shorten URLs to access data, in addition to using bitly. At this stage all required applications are elaborated into operational applications so that data can be input and processed as a process carried out by an application.

Furthermore, the testing phase is carried out by using it in calculating the Widyaiswara credit score of BPSDM DKI Jakarta Province, as a verification and validation process to check whether the software used meets the requirements and specifications needed [19]. In addition, a testing phase is carried out for debugging where bugs and system bugs are found, corrected, and improved.

Finally, given that the regulatory requirements have the potential to change, the software continues to develop, at the maintenance stage the process of modifying the software after testing is carried out to improve it by fixing errors, as well as improving performance and quality, including adapting the software to anticipate environmental developments, accommodating needs new users, and improve software reliability [20].

Schematically, the framework for the preparation and use of the online system for credit score proposal of Widyaiswara, which is carried out by the Administrator, Proposer and Appraiser is as presented in Figure 2.

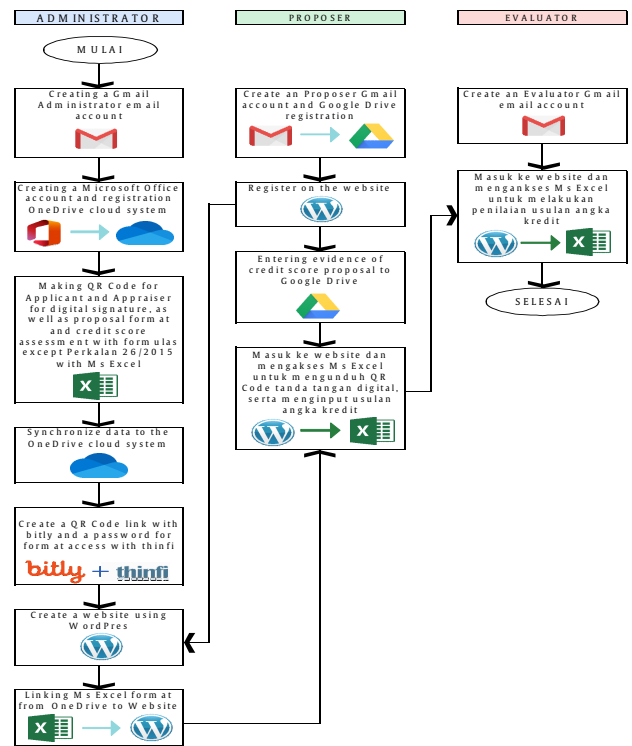


Figure 2. Process of preparing and using the online system for the proposed list of Widyaiswara credit score.

Based on the system that has been built, Widyaiswara can process the credit score proposal. The process begins with downloading the QR Code and password in the online system that will be used by the Widyaiswara to enter the proposed credit number data input phase along with physical evidence. Furthermore, the assessment team will assess the suitability of the proposed credit figure with the physical evidence submitted. If the proposal and physical evidence are appropriate, the appraiser will recommend the relevant Widyaiswara's credit number. If there is a mismatch between the proposal and physical evidence, the appraiser will adjust the proposed credit figure based on existing physical evidence. The complete pseudocode algorithm for proposing Widyaiswara's credit score can be seen in Figure 3 in the flow chart below.

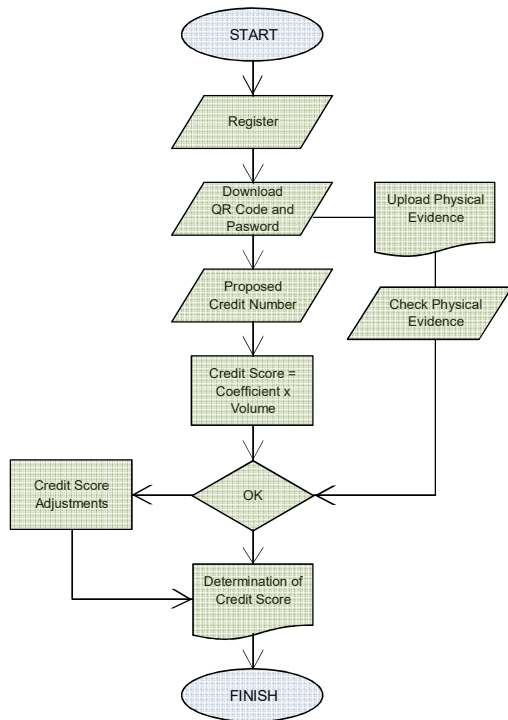


Figure 3. Flowchart of credit score proposal.

RESULTS AND DISCUSSION

To create a website of online system list of proposed credit score Widyaiswara of BPSDM DKI Jakarta, its uses Wordpress which has limited usage facilities with free hosting, can have its own domain and is given storage space even though the capacity is limited, but still very adequate for this system. The WordPress website is used for the system between Widyaiswara to enter the next credit score proposal system. The front page or homepage of the BPSDM DKI Jakarta Widyaiswara Dupak system can be seen in Figure 4.

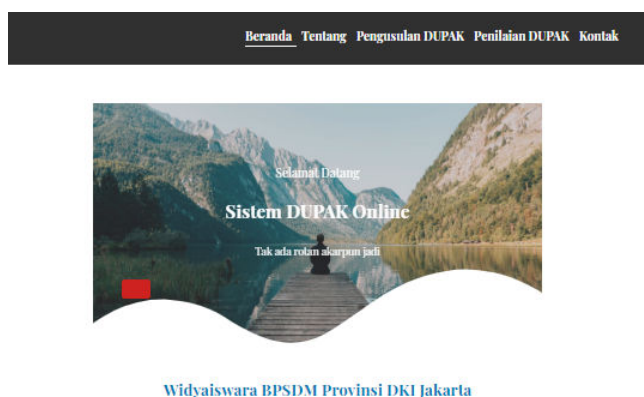


Figure 4. Home view.

On the front page, there are several menus that can be accessed by the lecturer who proposed it. The

menus prepared in this system are the homepage, about the online system list of proposed credit score Widyaiswara of BPSDM DKI Jakarta, the proposal of credit score that will be used by the proposing Widyaiswara, the list of proposed credit score assessment that will be used by the assessment team and contacts to communicate between the proposing lecturer and the system administrator. At the initial stage of proposing of credit score, Widyaiswara proposers can use credit score Proposal menu, which contains the names of Widyaiswara who submitted proposals based on previous registration through the contact menu. Registration is required to prepare a Microsoft Excel format template for each student who proposes it and is then linked from the cloud OneDrive system. For security, the Duplicate Proposal menu is given protection, so that only those who can open are given permission to access it, as shown in Figure 5 below.



Figure 5. Display of credit score proposal menu.

Then the proposer enters the Dupak proposal menu, the applicant can choose a registered name to enter the proposal format. Once again, for the security of the link to go to the proposed format, it is given password security as shown in Figure 6.

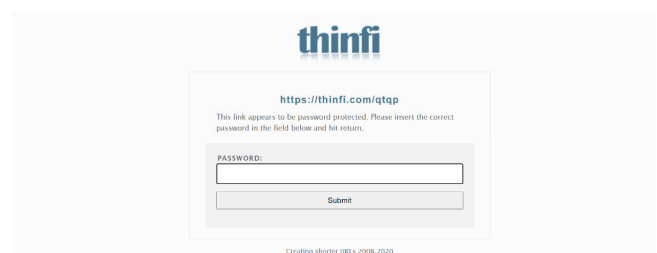


Figure 6. The protection display enters the proposed format.

Then the proposer will then be able to access the proposal format and fill it out. All formats are protected and only certain cells according to the needs of the proposer can be accessed and filled. The proposal format is made using Microsoft Excel which is easy to use and understand by the applicant. The appearance can be seen in Figure 7 below.

DAFTAR USULAN PENETAPAN ANGKA KREDIT (DUPAK)

Nama :	Pangkat/Gol./TMT :	Penata Tingkat I (III/d), TMT : 01 Oktober 2015
NIP/NRK :	Jabatan Widyaaiswara Ahli/TMT :	Muda, TMT : 22 Januari 2019
No. Seri Karpeg. :	Jangka Waktu Kegiatan :	Juli - Desember 2019
Tempat/Tgl. Lahir :	Periode Sidang :	Juli 2020
Pendidikan :	Batas Waktu Penyempitan :	25 Juni 2020
Instansi :	Jml. A.K. Periode-2 Sebelumnya :	369
	Tingkat Pelatihan Kewidyaiswaraan Berjenjang Yang Sudah Dilikuti :	Muda

NO	SUB UNSUR YANG DINILAI	KK	KOEFAK	SATUAN	USULAN ANGKA KREDIT		HASIL PEMERIKSAAN VERIFIKATOR		KETERANGAN
					VOL	JML	VOL	JML	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I	UNSUR UTAMA (80%)								
	A. PENDIDIKAN								
	a. Pendidikan formal/sekolah dan memperoleh ijazah/gelar								
	Mengikuti pendidikan formal/sekolah dan memperoleh ijazah/gelar:								
	1) Doktor (S3)	1	50	Ijazah	0	0,000	0	0,000	
	2) Magister (S2)	2	50	Ijazah	0	0,000	0	0,000	
	b. Didlat fungsional/teknis yang mendukung tugas Widyaaiswara dan Mengikuti Didlat Fungsional/teknis yang mendukung tugas Widyaaiswara dan	3	0,025	JP	80	2,000	0	0,000	
	JUMLAH UNSUR A					2,000		2,000	

Figure 7. Display of credit score proposal format.

After the proposal is complete, the next phase is the credit score assessment. The appraiser can enter the credit score assessment menu. As with proposals, this appraisal menu is also protected, so that only the assessor can access it, while the proposer can no longer access his proposal file. The display of the credit score assessment menu is as shown in Figure 8.



Figure 8. Credit score assessment menu display.

The assessment is carried out on the same file as the one proposed by the proposed Widyaaiswara, so the process is simple. The result of the assessment is an official report that will be discussed and approved in the plenary session of the Assessment Team. The results of the minutes of the assessment can be seen in Figure 9 below.

BERITA ACARA PEMERIKSAAN DAFTAR USULAN PENETAPAN ANGKA KREDIT

Nama :	Pangkat/Gol./TMT :	Penata Tingkat I (III/d), TMT : 01 Oktober 2015
NIP/NRK :	Jabatan Widyaaiswara Ahli/TMT :	Muda, TMT : 22 Januari 2019
No. Seri Karpeg. :	Jangka Waktu Kegiatan :	Juli - Desember 2019
Tempat/Tgl. Lahir :	Periode Sidang :	Juli 2020
Pendidikan :	Batas Waktu Penyempitan :	25 Juni 2020
Instansi :	Jml. A.K. Periode-2 Sebelumnya :	369
	Tingkat Pelatihan Kewidyaiswaraan Berjenjang Yang Sudah Dilikuti :	Muda

NO	SUB UNSUR YANG DINILAI	KK	KOEFAK	SATUAN	USULAN ANGKA KREDIT		HASIL PEMERIKSAAN ANGKA KREDIT		KETERANGAN
					VOL	JML	VOL	JML	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I	UNSUR UTAMA (80%)								
	A. PENDIDIKAN								
	a. Pendidikan formal/sekolah dan memperoleh ijazah/gelar								
	Mengikuti pendidikan formal/sekolah dan memperoleh ijazah/gelar:								
	1) Doktor (S3)	1	50	Ijazah	0	0,000	0	0,000	
	2) Magister (S2)	2	50	Ijazah	0	0,000	0	0,000	
	b. Didlat fungsional/teknis yang mendukung tugas Widyaaiswara dan Mengikuti Didlat Fungsional/teknis yang mendukung tugas Widyaaiswara dan	3	0,025	JP	80	2,000	80	2,000	
	JUMLAH UNSUR A					2,000		2,000	

Figure 9. Display format of credit score assessment minutes.

Widyaaiswara of BPSDM DKI Jakarta Province, based on the position in March 2020, consists of a total of 38 Widyaaiswara with details as presented in Table 1.

Table 1. Widyaaiswara of BPSDM DKI Jakarta as of March 2020.

No.	Widyaaiswara Position	Number
1	Ahli Pertama	2
2	Ahli Muda	14
3	Ahli Madya	15
4	Ahli Utama	7
Total		38

Meanwhile, based on rank, the lowest is Widyaaiswara with the rank of Penata Muda Tingkat I (III/b) and the highest rank is Pembina Utama (IV/e). There are 14 Widyaaiswara who have the rank of Pembina Utama Muda (IV/c) and above. In full, the rank and position of Widyaaiswara of BPSDM DKI Jakarta Province can be seen in Table 2.

Table 1. Rank and Class Widyaaiswara of BPSDM DKI Jakarta as of March 2020.

No.	Rank and Class	Number
1	Penata Muda Tingkat I	III/b
2	Penata	III/c
3	Penata Tingkat I	III/d
4	Pembina	IV/a
5	Pembina Tingkat I	IV/b
6	Pembina Utama Muda	IV/c
7	Pembina Utama Madya	IV/d
8	Pembina Utama	IV/e
Total		38

In accordance with the provisions, Widyaaiswara with the rank of Pembina Utama Muda (IV/c) and above proposes credit numbers to the State Administration Agency (LAN) of the Republic of Indonesia, so that 24 people still have to propose credit figures to BPSDM DKI Jakarta Province. On the occasion of testing the online system application for the proposed list of credit score assessment for the July 2020 trial period, there were 19 (nineteen) Widyaaiswara who proposed and those who did not propose were 5 (five). In the early stages of implementing the online system for proposing and assessing Widyaaiswara's credit numbers, there were several Widyaaiswara who were resistant. Especially for senior Widyaaiswara who are familiar with manual processes and unfamiliar with the use of information technology, which creates the impression that this online system is heavy, troublesome and creates controversy. However, with an understanding approach that the development of information technology is a necessity that we must face even though with all the existing limitations, both budget and expertise, this system can be built to facilitate work and a vehicle for increasing the competence of Widyaaiswara of BPSDM DKI Jakarta

Province in particular and national Widyaiswara throughout Indonesia in generally. The online system for proposing Widyaiswara's credit numbers is an example that can be done simply, easily and cheaply.

The process for proposing and calculating the BPSDM Widyaiswara credit number for DKI Jakarta Province so far requires a relatively long process time, as an illustration that the credit figure calculation for the January 2020 session period, which was submitted in early December 2019, can only be completed in early June 2020 or requires processing time in the range of seven months. By using the online system for proposing Widyaiswara's credit numbers, proposals and calculations carried out since the end of June 2020 can be completed by the end of July 2020, in only one month or so. The discussion process can be more effective, directed and comprehensive because it can easily make cross-corrections to the proposed Widyaiswara credit score. The assessment among the members of the Assessment Team is more objective when compared to the previous manual system. Communication between members of the Assessment Team was difficult because each of them was preoccupied with examining a large number of files in an irregular arrangement, so that there were often differences in the assessments made by the members of the Assessment Team.

Based on the evaluation carried out on the implementation of the online system for proposing Widyaiswara credit numbers by the proposers, an evaluation was produced that at the level of understanding of the system, all respondents or 100% of the proposers said they understood. For the level of difficulty filling in, 93% of respondents who proposed credit scores said it was easy, while only 7% said it was difficult. Regarding the use or implementation of the online credit score proposal system, 93% of respondents said it was easy and only 7% said it was difficult. As for the future, 21% of respondents who proposed that the use of the online system for proposing Widyaiswara's credit numbers at this time could be continued, 79% of respondents who proposed that they could continue with development. Meanwhile, none of the proposing respondents said that the online system for proposing Widyaiswara's credit numbers did not need to be continued. Regarding the benefits obtained from the implementation of the online system proposed by the BPSDM Widyaiswara DKI Jakarta Province, Widyaiswara respondents who proposed that they use this system; 1) 86% of the proposing respondents said they saved office stationery, 2) 64% of the proposing respondents said

they could be done anywhere, 3) 50% of the proposing respondents said they were saving costs, 4) 36% of the proposing respondents said they were saving time, 5) the proposing respondents said they were saving warehouse, 6) 7% of respondents who proposed that they had electronic records, and 7) there were no respondents who said there was no benefit. In detail, this can be seen in Figure 10 as follows.

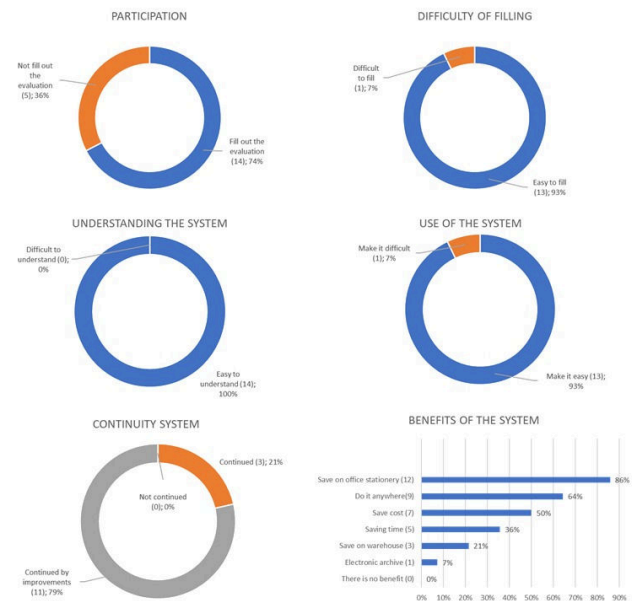


Figure 10. Response of respondents who proposed about the implementation of the online system.

The constructive input submitted by the respondents in the effort to develop the Online Dupak BPSDM Widyaiswara System can be identified as follows; 1) Online Dupak System so that it can be developed into an integrated system with Assignment Letter and submission of Statement of Conducting Activities, 2) so that a feature can be made that allows applicants to see the progress of their Dupak proposal, 3) a Question and Answer (QnA) forum is provided so that all obstacles can be resolved immediately, 4) technical socialization of the use of the system, 5) making an operating procedure system (SOP), 5) referring to the online system of the State Administration Agency (LAN).

CONCLUSION

Based on the results of trials as well as the implementation of the online application system for proposing BPSDM DKI Jakarta Widyaiswara credit numbers, it is concluded that: 1) the development of a credit score calculation system application for Widyaiswara, which has been constrained by limited costs and expertise, can be overcome by optimizing

various resources available. free of charge and widely available on the website; 2) by using a variety of software with many available free features, a credit score calculation system application for Widyaiswara can be built which has sufficient strength, accuracy, as well as easy data input and assessment processes. Very good to be applied to agencies with a limited number of lecturers; 3) the development of an online application system for proposing a Widyaiswara credit score can be done even by people with limited abilities in information technology can develop it; 4) Microsoft Excel is excellent software for use in various data processing purposes; 5) the use of cloud systems, which are currently provided by many software service providers and free data storage, is an opportunity to be optimally utilized in order to store data, distribute data and make data improvements online; 6) the assessment process can be carried out more effectively, directed and comprehensively because it can easily make cross-corrections to the proposed Widyaiswara credit score, so that the assessment among the members of the Appraisal Team is more objective.

SUGGESTION

As a suggestion, for activists in the world of education, the existence of software that is currently being offered can be explored, utilized and developed for various purposes such as making applications for issuing assignments, affidavits for carrying out activities, certificates of seminars or training. Many tasks can be done easily and cheaply by using the help of information technology.

For this reason, it is recommended to Widyaiswara so that the steps and spirit of dedication are not fixated on the lack of budget availability to carry out activities. Use existing resources, limitations are not a barrier to keep working, learning and developing more progressively for Widyaiswara's future towards professionalism with integrity. The online system for proposing Widyaiswara's credit numbers can and needs to be developed so that it can be used in a more user friendly and powerful way to do the work of proposing and calculating Widyaiswara's credit numbers or other functional positions.

ACKNOWLEDGEMENT

Thank you to the honorable Head of the Human Resources Development Agency (BPSDM) DKI Jakarta Province who has provided the opportunity to develop and apply the online system credit score proposal Widyaiswara of BPSDM DKI

Jakarta Province. Even though it is still not perfect yet, this system is built with the confidence and enthusiasm to be able to increase the joint competence of all levels of BPSDM DKI Jakarta Province.

REFERENCES

- [1] Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi Republik Indonesia, *Peraturan Menteri Pendayagunaan Aparatur Negara dan Reformasi Birokrasi Nomor 22 Tahun 2014 tentang Jabatan Fungsional Widyaiswara dan Angka Kreditnya*, 2014.
- [8] Lembaga Administrasi Negara Republik Indonesia, *Peraturan Kepala Lembaga Administrasi Negara Nomor 26 Tahun 2015 tentang Pedoman Penilaian Angka Kredit Jabatan Fungsional Widyaiswara*, 2015.
- [2] Sari, K., Dinillah, AA., Hariyanto, MFS., Munawar, G., Rahmani, A., Sistem Perhitungan Nilai Angka Kredit Dosen. *Prosiding Industrial Research Workshop and National Seminar*, vol. 10(1), pp 1394-1401, 2019 DOI: <https://doi.org/10.35313/jirwns.v10i1.1412>.
- [3] Munzir, MR., Husna, F. (2019), Sistem Informasi Penetapan Angka Kredit Guru Berbasis Web Di Dinas Pendidikan Kabupaten Pelalawan, *Jurnal Ilmiah Rekayasa dan Manajemen Sistem Informasi*, vol. 5(2), pp. 199-207, 2019. DOI:<http://dx.doi.org/10.24014/rmsi.v5i2.7577>.
- [4] Lembaga Administrasi Negara Republik Indonesia, *Sistem Informasi Widyaiswara*, 2015. [Online]. Available: <http://siwi.lan.go.id/>. [Accessed: 22-May-2020].
- [5] Badan Pengembangan Sumber Daya Manusia Energi dan Sumber Daya Mineral, *Aplikasi Dupak*, 2020. [Online]. Available: <https://dupak-bpsdm.esdm.go.id/auth/login>. [Accessed: 22-May-2020].
- [6] Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan, *Dupak Widyaiswara*, 2020. [Online]. Available: <http://202.70.136.161:8087/dupakwi/>. [Accessed: 22-May-2020].
- [7] Kementerian Pertanian Republik Indonesia, *Dupak Online Kementerian Pertanian*, 2020. [Online]. Available: <http://fungsional.pertanian.go.id/>. [Accessed: 22-May-2020].
- [9] Arifin, J., *Mengupas Kedahsyatan 340 Fungsi Terapan Microsoft Excel 2016*. Jakarta, PT Elex Media Komputindo, 2017.
- [10] Microsoft, *Memperkenalkan Microsoft 365*, 2020. [Online]. <https://www.microsoft>.

- com/id-id/microsoft-365. [Accesed: 22-May-2020].
- [11] Microsoft, Save your files and photo to OneDrive and access them from any device anywhere, 2020. [Online]. Avialable: <https://www.microsoft.com/en/microsoft-365/onedrive/online-cloud-storage>. [Accesed: 22-May-2020].
- [12] WordPress, 37% dari web dibuat di WordPress, 2020. [Online]. Available: <https://id.wordpress.com/>. [Accesed: 22-May-2020].
- [13] Google, Semua file Anda, siap dimana saja Anda berada, 2020. [Online]. Available: <https://www.google.com/intl/id/drive/>. [Accesed: 22-May-2020].
- [14] Thinfi, With thinfi you can convert a long tricky url into a short and simple one, 2020. [Online]. Available; <https://thinfi.com/>. [Accesed: 22-May-2020].
- [15] Bitly, Create Click-Worthy Links, 2020. [Online]. Avialable: <https://bitly.com/>. [Accesed: 22-May-2020]
- [16] O'Brien, Marakas, *Management Sistem Information*. New York: McGraw Hill, 2010.
- [17] Royce, W., Managing the Development of Large Software Systems, *Proceedings of IEEE WESCON*, vol. 26, pp. 1-9, 1970.
- [18] Bassil, Y., A Simulation Model for the Waterfall Software Development Life Cycle. *International Journal of Engineering & Technology*, vol. 2(5), 2012.
- [19] IEEE Standard Computer Dictionary 610, *A Compilation of IEEE Standard Computer Glossaries*, 1991 DOI:10.1109/IEEESTD.1991.106963.
- [20] Stellman, A. Greene, J., *Applied Software Project Management*, O'Reilly Media, 2005.