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Identification of Educational Staff Performance Problems Related to Digital Competence with Front-End Analysis

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Abstract: The impact of the development of digitalization creates an urgent situation for organizations to immediately integrate the role of technology in supporting their work. This is reinforced by Presidential Regulation No. 82 of 2023 which implicitly instructs the bureaucratic ranks in an organization to immediately make changes to the way they work and develop individuals within the organization to fit the new digital era. The research aims to identify performance problems related to digital competence and their causes, determine whether there are performance gaps that occur, and identify alternative solutions that can be used to overcome performance gaps at the Office Deputy of the National Level Leader-Education of Lemhannas RI (The National Resilience Institute of the Republic of Indonesia). This qualitative research follows the research stages of the Joe Harless (front-end analysis) performance analysis model with data collection techniques in the form of questionnaires involving 23 education staff and continued with observations and interviews to complement and confirm the data from the questionnaire answers. The research results show that designing and providing digital competence training is an alternative solution that relevant organizations may choose to improve the digital competence of education staff by considering the digital competence areas that have been suggested in the research complete with alternative digital technologies that have been delivered so that the training designed can be in accordance with the identification of existing needs. The results of the research may be implemented in determining the appropriate development activities for human resources at the Office Deputy of the National Level Leader-Education of Lemhannas RI, especially to improve digital competence as an effort to address organizational transformation in the era of digitalization.

Keywords: digital competence, education staff, performance problems

Abstrak: *Dampak perkembangan digitalisasi menimbulkan situasi mendesak agar organisasi segera mengintegrasikan peran teknologi dalam mendukung pekerjaanya. Hal tersebut dikuatkan dengan adanya Peraturan Presiden Nomor 82 Tahun 2023 yang secara tersirat menginstruksikan agar jajaran birokrasi dalam sebuah organisasi segera melakukan perubahan pada cara kerja mereka serta mengembangkan individu di dalam organisasi agar sesuai dengan era baru yang serba digital. Penelitian bertujuan untuk mengidentifikasi masalah kinerja yang berkaitan dengan kompetensi digital dan mengenali penyebabnya, serta menentukan apakah ada kesenjangan kinerja yang terjadi, dan mengindentifikasi alternatif solusi yang dapat digunakan untuk mengatasi kesenjangan kinerja di Kedeputian Pendidikan Pimpinan Tingkat Nasional Lemhannas RI. Penelitian kualitatif ini mengikuti tahapan penelitian dari model analisis kinerja Joe Harless (front-end analysis) dengan teknik pengumpulan data berupa kuesioner dengan melibatkan 23 orang tenaga kependidikan serta dilanjutkan dengan observasi dan wawancara untuk melengkapi dan mengkonfirmasi data hasil jawaban kuesioner. Hasil penelitian menunjukkan bahwa perancangan dan pengadaan pelatihan kompetensi digital merupakan alternatif solusi yang dapat dipilih organisasi terkait untuk meningkatkan kompetensi digital tenaga kependidikan dengan mempertimbangkan dimensi atau komponen kompetensi digital yang perlu ditingkatkan sesuai dengan kebutuhan. Hasil penelitian dapat diimplikasikan pada*

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penentuan kegiatan pengembangan sumber daya manusia yang dimiliki oleh Kedeputian Pendidikan Pimpinan Tingkat Nasional Lemhannas RI utamanya dalam meningkatkan kompetensi digital sebagai upaya menghadapi transformasi organisasi di era digitalisasi.

Kata Kunci: *Kompetensi digital, masalah kinerja, tenaga kependidikan.*

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INTRODUCTION

Digital competencies have been recommended by the European Commission to be one of the key competencies for lifelong learning (Ala-Mutka & Redecker, 2008; Garzón-Artacho et al., 2021). Recommendations from the European Commission point to the importance of mastering technology and digital-related skills now and in the future to help reduce the digital divide (Dias-Trindade & Albuquerque, 2022; Zhao et al., 2021) For example, due to the covid 19 pandemic that struck in 2020, when the education sector was constrained to conduct face-to-face activities, digital technology took a very large role in solving this problem (Vishnu et al., 2022). However, the increasing use of advanced technology is not accompanied by an increase in human resource skills, where improving human resource skills is one of the most important challenges faced by organizations (Trenerry et al., 2021).

Although many digital technologies have been developed to assist the education field today, not all education human resources have the ability or willingness to utilize them (Cattaneo et al., 2022). Technological developments in work practices show that technological change requires mastery of new skills, digital technology not only creates and destroys jobs but also changes what individuals do at work and how they do it (Tramontano et al., 2021). Some of the factors that influence the inability of human resources to integrate digital technology include internal or personal factors including attitudes and beliefs and resistance to using technology, and external or professional factors that include access, training, and technological support (Demissie et al., 2022; Mercader & Gairín, 2020). In addition, the low digital competence of individuals and lack of training are also factors that make the lack of utilization of digital technology in job completion (Oberländer et al., 2020).

The process of increasing human resource competencies in an organization has an important role in increasing the knowledge and abilities needed by human resources and increasing productivity, work quality, motivation, and job satisfaction. However, currently, many organizations have difficulty in determining whether the competency development provided to their human resources has been effective in improving their performance. From the observations made on the documents on the implementation of human resource development activities at the Office Deputy of the National Level Leader-Education of Lemhannas RI, it was found that the competency development program aimed at education staff did not begin with a needs analysis process and there was no evaluation process for the competency development activities that had been carried out. In fact, the role of the initial stage, namely performance analysis or needs analysis, is very necessary in terms of competency development, given its relevance to addressing performance problems and recognizing their causes (Cotes & Ugarte, 2019).

Previous studies indicate that identifying and solving individual performance problems within an organization is needed to improve individual performance and help the organization adapt, compete, innovate, improve services, and achieve organizational goals (Salas et al., 2012). In addition, a properly conducted performance analysis can also prevent organizations from unnecessary expenses and help organizations to focus on solving performance problems that occur and achieving organizational goals (Holloway et al., 2018). Research conducted to analyze self-development needs for educators and

education staff in a high school organization concluded that self-development to improve abilities and performance is needed to support individual work in the organization (Nawangwulan, 2018). Research related to needs analysis using needs assessment was successfully conducted to determine gaps and find alternative solutions for new teachers in meeting the competencies and skills needed to carry out their duties at school (Susanti et al., 2022).

Cotes & Ugarte conducted research to identify performance problems and look for possible causes of performance problems by proposing appropriate and comprehensive analysis models as research results to be applied to their target organizations (Cotes & Ugarte, 2019). In another study conducted using the literature review method, it succeeded in providing a fairly in-depth study related to the design of self-development programs such as what is appropriate for developing digital competencies for ASN (Khoironi, 2020). Furthermore, studies on the effect of training needs assessment on performance also show that training needs assessment and the availability of training resources have a significant influence on individual performance in the organization. Therefore, the human resource development department in an organization needs to be trained to create effective training programs to improve individual performance in the organization (Dagnew Gebrehiwot & Elantheraiyan, 2023). Some previous research studies show that performance analysis is an important thing that needs to be done to identify performance problems that occur including problems related to digital competencies, while determining alternative solutions that can be used to solve the performance problems found so that individual performance can improve and at the same time bring improvement to organizational performance.

Although previous studies have provided several perspectives in finding solutions to identify and solve performance problems, these studies do not clearly state what steps they apply to carry out performance analysis, so it is not easy for future research to get a complete picture of how the steps in analyzing performance problems to get the right solution and can provide added value for both education staff and the organization where they work. Thus, the novelty of this research focuses on the performance analysis stage by applying front-end analysis steps to identify performance problems related to digital competencies and recognize their causes, as well as determine whether there is a performance gap that occurs, and identify alternative forms of intervention that can be used as solutions to overcome the performance gap. It is important to conduct this research because the effectiveness of the other stages of an individual's personal development program depends on the results of this performance analysis activity in order to produce effective solutions to the performance problems that occur.

RESEARCH METHODS

The research used a qualitative approach with a descriptive method. This study involved a total of 23 education staff who are part of the Office Deputy of the National Level Leader-Education of Lemhannas RI to identify and find solutions to performance problems related to the digital competence of education staff. The data collection technique was carried out by providing online questionnaires to 23 education staff. The questionnaire instrument was distributed to education staff using google form which contains questions regarding self-perception in utilizing technology in work as well as an overview of digital technology needs and future self-development. In addition, interviews were also conducted with 2 education staff and observations of documents, facilities, and the way education staff work to complement and test the data from the questionnaire answers. Before use, the research instruments (questionnaires, interview guides, and observation guides) were given to reviewers to determine the eligibility of the instruments to be used.

In conducting data analysis, researchers collected and processed data from the needs analysis questionnaire by collecting the answers of education staff. Descriptive data analysis is used in research with data reduction, data presentation, and conclusion drawing. After all the data and information is collected, data reduction is carried out by analyzing each answer, summarizing, and separating the data in accordance with the focus of the research. The results of the data reduction are then presented so that researchers can get an overview of the problem under research. Then from the description of the problem, the researcher formulates conclusions that can be drawn to achieve the research objectives, namely identifying a list of performance problems related to digital competence and their causes as well as formulating alternative solutions such as what is expected and can be used to overcome the performance gap that occurs.

The performance analysis model carried out in the study follows Joe Harless' performance analysis steps known as front-end analysis or an ounce of analysis (Prawiradilaga & Chaeruman, 2018), as follows:

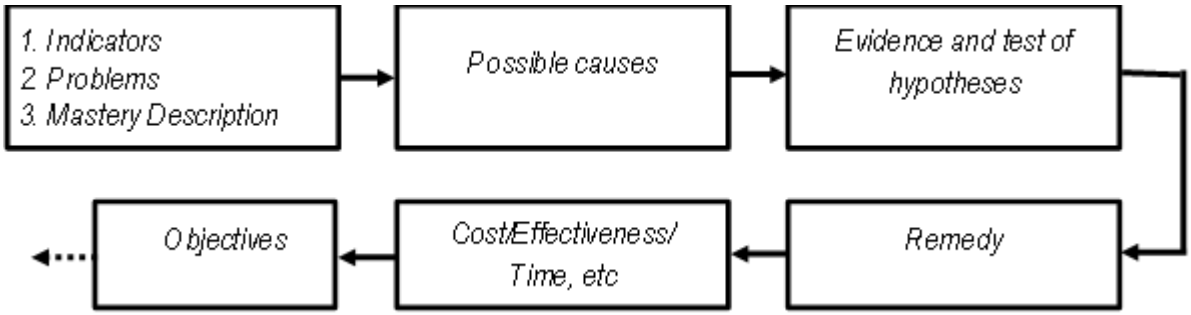

Figure 1. Front-End Analysis Model (Prawiradilaga & Chaeruman, 2018)

RESULTS AND DISCUSSION

The research aims to identify performance problems related to digital competencies, recognize their causes, determine whether there is a performance gap, and find alternative solutions to overcome the performance gap in the Office Deputy of the National Level Leader-Education of Lemhannas RI.

In the initial stage of performance analysis, researchers conducted an investigation to determine indicators of performance problems and their possible causes. The focus of this study is on performance issues related to the digital competencies of education staff. These indicators are based on observable symptoms or conditions, such as how education staff perform their duties, their daily behavior, work results, and the time required to complete tasks. The findings from this stage are presented in Table 1.

After identifying performance problem indicators related to digital competencies, researchers analyzed potential causes. This assessment involved observing how education staff work and conducting interviews with two education staff members to explore why and how these performance issues arise. The suspected causes of the problems identified during this process are also presented in Table 1.

The investigation then proceeded to gather evidence supporting the identified indicators and causes of performance problems. Data collection was carried out through a survey of 23 education staff members, followed by interviews and observations to validate the survey findings. This process aimed

to test the hypotheses derived from the initial assessment. The evidence obtained from these efforts is presented in Table 1.

Table 1. Indicator, Possible Cause, and Evidence Performance Problems

Indicator	Possible Cause	Evidence
Problem formulation (conjecture): It is suspected that education staff lack mastery of digital technology that can help complete their work tasks, resulting in obstacles in solving work problems related to digital technology and the less effective and efficient way of working they do. **Ideal:** Education staff master digital technology that can help their work tasks so that the work they do can be effective and efficient.		
On average, education staff only use basic Microsoft Office to work.	Lack of knowledge of digital media or platforms due to the demands of the tasks that are relatively the same in each period.	From the questionnaire, it is known that 22 education staff (95%) are able to work with Microsoft office, but only 5 education staff (21%) are able to utilize other platforms or applications such as google workspace, canva, and similar applications.
Education staff experience problems due to a lack of mastery of digital technology.	Lack of self-development programs related to digital technology provided by agencies or attended by education staff.	From the questionnaire given to 23 education staff, it is known that 12 education staff (52.2%) often experience problems at work due to a lack of mastery of digital technology, and 7 education staff (30.4%) sometimes also experience problems due to a lack of mastery of digital technology.
The available technology infrastructure has not been able to help work optimally.	Constraints on available digital technology infrastructure.	From the questionnaire given to 23 education staff, 13 education staff (56.5%) considered that adequate technological infrastructure to help with work was available but often experienced problems. Meanwhile, 6 education staff (26.1%) think that digital technology infrastructure is available but only partially.
Self-development programs only support a small portion of specific tasks or assignments.	Many self-development programs are geared more towards the needs of technical work such as budgeting, business process maps, etc.	From the questionnaire given to 23 education staff, it is known that self-development programs related to digital technology that have been provided by the organization only support a small part of their duties (30.4%) and only support for certain job duties (30.4%).

The results of the previous three stages serve as the basis for determining a list of alternative solutions to address the identified performance problems, also known as remedies or interventions. In line with the main focus of the research, only performance issues related to digital competencies that fall into the category of knowledge or ability will be considered. Performance problems arising from constraints related to the existing digital technology infrastructure within the organization will be excluded from the analysis. To address the digital competency-related performance issues, researchers propose several interventions aimed at overcoming these challenges.

Table 2. Process of Intervention Selection

Phase I			Phase II
Alternative Intervention	**Benefits**	**Limitations**	**Value**
Design and	a. Accommodate needs	a. The costs incurred are	3

conduct digital competence training for education staff.	in the long term. b. Addition of knowledge for education staff. c. Can be done at the right time and conditions. d. The material taught can adjust the most pressing needs of education staff.	relatively higher. b. Requires a specialized team to design the training. c. Requires a long planning time. d. Special schedules and budgets must be prepared.	
Involving representatives of education staff to attend competence training held by other parties.	a. Accommodate needs in the long term. b. Addition of knowledge for education staff. c. The costs incurred are relatively cheaper. d. Does not require a special team to design the training.	a. Can only follow the time set by the organizer. b. The material taught cannot necessarily be in accordance with the most urgent needs of education staff. c. Education staff must leave their duties if the training time is during working hours. d. It takes a relatively long time to transfer knowledge from one individual to another. e. Can cause jealousy in individual education staff.	2

Once the list of alternative solutions in the form of interventions is given, the next step is to estimate the approximate "value" of each of the alternative solutions.

Table 3. Intervention Value Estimation Process

Phase II		Phase III		Phase IV
Alternative Intervention	**Value**	**Intervention Estimated Values**	**Intervention Estimate Price**	**Considerations**
Design and conduct digital competence training for education staff.	3	a. Costs of the design team and/or training committee. b. Costs for presenters c. Cost of consumption. d. Cost of training kits. e. Stationery etc.	a. Costs of the design team and/or training committee. Rp. 7.650.000 b. Costs for presenters Rp. 2.000.000 c. Cost of consumption Rp. 77.000/pax d. Cost of training kits Rp. 250.000/pax e. Stationery etc. Rp. 2.500.000	The training program budget can be a long-term investment because it can be held every period.
Involving	2	a. Training	a. Training	Additional

representatives of education staff to attend competence training held by other parties.	registration. b. Transportation fee. c. Education staff leave their job duties.	Registration >Rp.300.000/pax b. Transportation fee >Rp.150.000/pax	activities are needed as a follow-up to spread the knowledge gained.

Based on the results of the previous performance analysis, it can be seen that there are performance gaps related to digital competencies and several alternative interventions that can be selected as solutions by considering the value of benefits and limitations as well as the availability of existing budgets. From the results of the considerations that have been given, an alternative intervention solution is chosen to design and conduct digital competence training for education staff. Furthermore, the researchers collaborated with related parties to compile a report on the results of the performance analysis and continued with designing a digital competence training design for educational staff within the Office Deputy of the National Level Leader-Education of Lemhannas RI.

Based on the results of the research that has been conducted, it can be seen that the best alternative solution that can be chosen to solve performance problems related to the lack of mastery of digital technology that can help complete the work tasks of education staff is to design and conduct digital competence training for education staff. Training of individuals or employees of the organization itself is defined as planned activities designed to provide opportunities for individuals to learn the skills needed to meet current and future job demands (Chang et al., 2015). In addition, training can also be interpreted as a key process to improve the skills, attitudes, and knowledge of individuals in order to achieve better results for themselves and their organizations (Mahmud et al., 2019).

The importance of organizations to design and conduct their own training is because with training designed by the organization itself, the training designed can be carried out at the right time and conditions, and the strategies used and the materials taught can adjust the most pressing needs of education staff. This is relevant to the results of research from Kanango et all., that by optimizing material topics and teaching strategies designed based on the needs and desires of training targets, it can improve and increase the satisfaction that will be obtained (Kanango et al., 2023). In addition, by creating and implementing training programs tailored to the needs can increase knowledge, skills, and benefits for individuals and the organization itself (Vasanthi & Rabiyathul Basariya, 2019). Effective human resource management and training is also one of the important keys to organizational success in developing (Salas et al., 2012).

However, it is important to remember that alternative solutions in the form of training interventions should focus on developing relevant and needed skills, using interactive learning activities and designs, focusing on the training objectives, and providing adequate support to implement the training (Todd & Stewart, 2023). Therefore, the way training is designed, delivered and implemented is very important to consider (Salas et al., 2012), because if the above can be optimally done, the training designed by the organization will be able to help individuals to improve their knowledge, skills, and motivation and lead to improved individual performance in the workplace (Schachter et al., 2016). Then for the organization, successful training in improving individual performance will help the organization adapt, compete, innovate, improve services, and achieve organizational goals (Salas et al., 2012).

In relation to digital competence, within the scope of work organizations, digital competence can be interpreted as a set of basic knowledge, skills, abilities, and other characteristics (personality, motivation, personal interests, experience, or educational degrees) that enable individuals in the

workplace to complete their job tasks efficiently and successfully with the help of digital media (Oberländer et al., 2020). In its latest development, the European Commission divides the dimensions of digital competence into 5 (five) dimensions, namely information and data literacy, communication and collaboration, digital content creation, safety, and problem solving (Riina et al., 2022). Then in another study, digital competencies were specifically and in detail divided into 25 digital competence components specifically designed to be applied to workplace organizations (Oberländer et al., 2020).

In the process of individual development, digital competencies cannot be learned alone, but need the design and implementation of special training programs (Hinojo-Lucena et al., 2019). It is realized that with the application of appropriate and appropriate training, the improvement of individual competence will be better (Hendrani et al., 2022). Therefore, the dimensions or components of digital competence that will be developed for education staff also need to be adjusted to the needs they require. Based on the results of the needs analysis that has been carried out, the following are areas in digital competence that are suggested to be material in the digital competence training to be designed. The areas in digital competence were chosen because they are directly related to the tasks that education staff perform in their daily work.

Table 4. Digital Competence Areas and Improvement Needs

Areas	Improvement Needs	Scope of work	Alternative Digital Technology Options
Information and data literacy	Use of digital technology to search for information and data needed to support the formulation of content at work.	Tasks to develop curriculum, control devices, teaching materials, technical guidelines, etc.	Chat GPT or Microsoft Copilot
Communication and collaboration	Collaborative ways of working with effective communication using digital technology.	Tasks that require cooperation between sub-sections and sections.	Google Workspace
Digital content creation	Create presentation media used to explain various educational activities to participants and guests.	Additional tasks of education staff.	Canva

From the table, it can be conveyed that the need for digital competency improvement for educational staff in the Office Deputy of the National Level Leader-Education of Lemhannas RI is more directed towards how to work collaboratively with effective communication using digital technology, the use of digital technology to find solutions to solve their work problems, and the use of digital technology to find information and data needed to support the formulation of content in their work and the use of digital technology to create presentation media that can be used to explain various educational activities.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results and previous discussion, it can be concluded that there are performance problems related to digital competencies identified, including a lack of knowledge of digital media or platforms due to relatively the same task demands in each period, a lack of self-development programs related to digital technology provided by the agency or followed by education staff, the available

technological infrastructure has not been able to help work optimally and the self-development programs that have been implemented only support a small part of certain tasks or tasks. The identified performance problems cause gaps in the form of obstacles in solving work problems related to digital technology and the less effective and efficient way of working they do. Therefore, to overcome this gap, it is necessary to design and procure digital competence training as an alternative solution that can be chosen by the relevant organization to improve the digital competence of education staff by considering the digital competence areas that have been suggested in the research complete with alternative digital technologies that have been delivered so that the training designed can be in accordance with the identification of existing needs. Furthermore, researchers suggest that the development of digital competence training can be carried out immediately and tested on potential targets given the relevance of digital competence to future needs.

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