

Importance-Performance Analysis of SINERGI UPI Website User Satisfaction

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ABSTRAK

ABSTRAK

SINERGI UPI merupakan sistem pengelolaan arsip dinamis di Universitas Pendidikan Indonesia (UPI). Penggunaan SINERGI di lingkungan UPI menjadi hal yang perlu diupayakan untuk pengelolaan arsip dinamis secara optimal. Salah satu hal yang perlu diperhatikan adalah komponen user satisfaction untuk menciptakan kesan yang baik bagi civitas academica sebagai pengguna SINERGI. Penelitian ini dilakukan untuk menganalisis SINERGI dari aspek user satisfaction. Penelitian menggunakan pendekatan kuantitatif dengan metode survey. Survey dilakukan kepada staf program studi di lingkungan Fakultas Ilmu Pendidikan (FIP) UPI yang aktif menggunakan SINERGI, yaitu sebanyak tiga belas orang. Teknik analisis data menggunakan Importance-Performance Analysis (IPA). Hasil penelitian menggambarkan bahwa semua indikator masuk pada kuadran II, yaitu keep up the good works. Hal tersebut menunjukkan bahwa user satisfaction SINERGI civitas academica FIP UPI telah merasa puas dengan fasilitas SINERGI dan diharapkan ke depannya menjadi lebih baik lagi. Namun demikian ada harapan serta usulan perbaikan untuk pengembangan website SINERGI dengan menambahkan menu bar dan notifikasi. Beberapa staf mengharapkan ada menu tambahan yaitu notifikasi yang dikirimkan melalui email atau WhatsApp. Hal tersebut agar dapat memudahkan saat ada pemberitahuan surat masuk agar para staf dapat segera meresponnya. Juga terdapat usulan lain berupa workshop lanjutan terkait penggunaan SINERGI pada level lebih tinggi.

SINERGI UPI is a dynamic archive management system at Universitas Pendidikan Indonesia (UPI). The use of SINERGI within UPI needs to be pursued for optimal management of dynamic archives. One thing that needs to be considered is the user satisfaction component to create a good impression for the academic community as SINERGI users. This research was conducted to analyze SINERGI from the aspect of user satisfaction. The research uses a quantitative approach with survey methods. The survey was conducted among study program staff within the Faculty of Educational Sciences UPI who actively use SINERGI, namely thirteen people. The data analysis technique uses Importance-Performance Analysis (IPA). The research results illustrate that all indicators fall into quadrant II: Keep up the good work. This shows that the SINERGI user satisfaction of the FIP UPI academic community is satisfied with the SINERGI facilities, and it is hoped that it will be even better in the future. However, there are hopes and suggestions for improvements for the future development of the SINERGI website, namely in the menu bar and notifications. Some staff expect an additional menu, namely notifications sent via email or WhatsApp. This is to make it easier when there is an incoming letter notification so that the staff can respond immediately. There is also another proposal in the form of a follow-up workshop related to using SINERGI at a higher level.

1. INTRODUCTION

Administrative services in an organization are essential, and one of them includes correspondence services. Management of correspondence documents in the form of archives is standard; in principle, it needs to be done in an organization (Ofei et al., 2020; Suryana et al., 2018). Following Republic of Indonesia

National Archives Regulation Number 9 of 2018 concerning Guidelines for Maintaining Dynamic Archives, it is explained that activities in maintaining the integrity, security, and safety of archives, both physical and informational, include filing and storing active archives, structuring and storing archives. The implementation of managing correspondence documents in archives has various factors affecting its effectiveness, such as Human Resources, technology, supporting devices, organizational work environment, and other things related to organizational activities (Hamdani et al., 2019; Virvou et al., 2005). In addition, using systems and information technology in archiving supports operational activities, which can speed up activities and facilitate user management.

The presence of an information system that can help with the work process is one of the things that can be expected. In the era of technological development, such as today, the implementation of administrative services has been carried out with the help of technology (Ariono et al., 2022; Supandi & Senam, 2019). As already known, this technology can ideally facilitate all daily activities, especially in performing incoming to outgoing letter data archive management services. The management of this correspondence document is accommodated by using a specific system. The system plays a role in managing all incoming and outgoing correspondence documents and is expected to accelerate and improve the performance of document managers or archivists and facilitate archive management (Gormally et al., 2012; Rohmah & Bukhori, 2020). Success in archive management is based on meeting the needs of the institution. If the archive is appropriately stored, the archive can be retrieved quickly, and the information obtained can guarantee the source of the data. The bigger an institution is, the more the volume of owned and managed archives increases.

Universitas Pendidikan Indonesia (UPI) previously used a system that aimed to facilitate the implementation of administrative services, especially correspondence between units within Universitas Pendidikan Indonesia, namely the Dynamic Archival Information System ("Sistem Informasi Kearsipan Dinamis" or "SIKD") developed by the National Archives of the Republic of Indonesia ("Arsip Nasional Republik Indonesia" or "ANRI"). SIKD is intended for BUMN, BUMD, and higher education institutions for their archive management processes as a form of implementation of the National Archives System (SIKN) (Hoesny & Darmayanti, 2021; Mazloumi et al., 2021). The purpose of implementing this SIKD application is to support the modern bureaucracy by implementing e-government. Previous study also explained that this SIKD application's purpose is to facilitate archive management and delivery activities, so there will be a desire to make automated mail management uniform (Alfian et al., 2022; Lesva & Arif, 2020). However, now it has been integrated with SANDI UPI into SINERGI UPI. SINERGI at UPI has just been used in early 2023 and is managed by the University Archives unit and used by all work units and sub-units. SINERGI is developed and used to improve archive awareness in work units, and this effort needs commitment from all elements of the organization. As is known, organizational commitment will lead to higher performance and effectiveness from employees toward the organization (Duklim & Musigrungsi, 2018; Mubyl & Dwinanda, 2019). Archival awareness needs to be improved due to the lack of archival awareness among the public. This is done so that managing archives and correspondence documents becomes a concern and raises awareness to always manage archives and correspondence documents properly in their respective work units.

SINERGI was only used in early 2023 because the university archives had previously used SIKD to send correspondence between units within UPI. However, research shows that the UPI community is still comfortable using printed data or documents. In addition, there is also a gap in the skills of the UPI academic community in utilizing technology. Hence, there is a feeling that SIKD is challenging to operate, difficult to remember, and uncomfortable to use. SINERGI has updated the use of information systems used in correspondence, namely by using the telegram feature to get real-time notifications to get and send messages in the form of telegram bots (Desnanjaya & Nugraha, 2021; Mouakket & Sun, 2020). Another feature in SINERGI is the My Desk feature, which is used to view drafts of letter manuscripts that are being processed or require follow-up on the letter. The user interface on SINERGI on the initial page is relatively easy to understand, so users are immediately directed to enter a user account and complete personal information if several stages have been fulfilled. In the Dashboard section, with a more straightforward display equipped with images and descriptions, users can directly select the menu that will be used/needed. SINERGI also has other advantages in its use, namely for SINERGI itself, a more effective display than SIKD (Mentzakis et al., 2020; Sedrakyan et al., 2020).

SINERGI, which is a merger of SIKD and SANDI, aims to facilitate information services for academics, staffing, and the public that are dynamic and applicable. The current application has changed to SINERGI, and the implementation of SINERGI is still relatively new, so it requires awareness in utilizing SINERGI in the Universitas Pendidikan Indonesia environment. SINERGI is generally an app used to manage manuscripts from creation to distribution (Oláh et al., 2020; Welch & Piekkari, 2017). Due to this, the application of SINERGI in units at the Universitas Pendidikan Indonesia is still not fully effective, even

though some units have started operating them in their daily activities to support the activities carried out. Based on this, this study aims to determine the implementation and response given based on the implementation of SINERGI in the UPI, especially the Faculty of Educational Sciences (FIP).

The development of existing research in this area indicates that while SINERGI represents an advancement over the previous system (SIKD), some challenges remain, including the comfort level of the university community with digital processes, user-friendliness, and the need for increased awareness and commitment to proper archive and correspondence document management. The novelty value of this research lies in its specific focus on evaluating the implementation and responses to SINERGI, offering insights into the adoption and adaptation of advanced information systems in an academic environment and addressing potential obstacles to their effective use at a higher level. The urgency of researching the implementation of SINERGI at Universitas Pendidikan Indonesia, particularly in FIP, lies in the need to assess the effectiveness of this newly integrated information system in improving administrative correspondence services and archive management, given its potential impact on the institution's efficiency and overall performance. This research was conducted to analyze SINERGI from the aspect of user satisfaction.

2. METHOD

The research utilized a descriptive quantitative approach with a survey method (Seixas et al., 2018). Quantitative research aims to analyze either quantitative or qualitative data that has been quantified. This research is based on an empirical approach with data collection and analysis presented in numerical form, allowing for calculation. It is complemented by a survey method, which enables researchers to gather information based on existing phenomena and obtain factual information. The survey was conducted among the staff of study programs within FIP UPI. Thirteen active staff members participated as respondents in filling out the questionnaire. These respondents were selected because they were the most active users of SINERGI within the FIP UPI environment. The data analysis technique employed is Importance-Performance Analysis (IPA), characterized by four quadrants. The original IPA framework is show in Figure 1.





The research instrument used for measuring user satisfaction in academic development user satisfaction is used as a way to determine the level of success of the academic information system. This is by the research that was studied, namely knowing the level of user satisfaction on SINERGI in the FIP UPI environment, which is a combination of the previous system, namely the Dynamic Archive Information System ('Sistem Informasi Kearsipan Dinamis' SIKD) and the Digital Signature System ('Sistem Tanda Digital' SANDI) with the Importance-Performance Analysis (IPA) data analysis technique. The research questionnaire was developed based on the User Satisfaction theory from. The User Satisfaction theory proposes seven questions based on several aspects of assessment: quality systems, service quality, information quality, user behavioral tendencies, user satisfaction, and usefulness to users. Questionnaire grid based on user satisfaction is show in Table 1.

Table 1.	Questionnaire	Based on	User	Satisfaction
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No	Questionnaire (Indicator)	Code
1	You like the look of SINERGI	Q1
2	You like the services available at SINERGI	Q2
3	You enjoy interacting with this SINERGI website	Q3
4	You don't have to wait long when you enter the SINERGI website	Q4
5	SINERGI provides services to facilitate the management of dynamic archives	Q5

No	Questionnaire (Indicator)	Code
6	The information provided is useful for users	Q6
7	The SINERGI website can be accessed properly using a device (iphone, ipad, Android smartphone, tab, etc.)	Q7

3. RESULT AND DISCUSSION

Results

The results of this study aim to conduct Importance-Performance Analyses (IPA) on user satisfaction on the UPI SINERGI website. This study used a questionnaire of seven indicators covering different aspects of using the SINERGI website. The indicators are Q1: You like the look of SINERGI; Q2: You like the services available at SINERGI; Q3: You enjoy interacting with this SINERGI website; Q4: You don't have to wait long when you enter the SINERGI website, Q5: SINERGI provides services to facilitate the management of dynamic archives Q6: The information provided is useful for users, and Q7: The SINERGI website can be accessed properly using a device (iPhone, iPad, Android smartphone, tab, etc.). The description of the results of the research that has been carried out is show in Table 2.

No	Question	rcount	r table	Validity
1	Q-01	0.69	0.55	Valid
2	Q-02	0.90	0.55	Valid
3	Q-03	0.91	0.55	Valid
4	Q-04	0.91	0.55	Valid
5	Q-05	0.79	0.55	Valid
6	Q-06	0.82	0.55	Valid
7	Q-07	0.83	0.55	Valid

Table 2. Test of Validity Questionnaire

The data consists of seven questions (Q-01 to Q-07), r_{count} , and r_{table} values representing the fit or correlation level between the measured variables. Each question has an r count value of 0.69 to 0.91 and a fixed r_{table} value of 0.55. This data shows a significant relationship between the variables measured in these questions. Table 2 shows that all questions have a good level of validity because the r count value exceeds the r table value. This shows that the correlation results are consistent and reliable. This data shows a strong relationship between the variables measured in each question. Result of user satisfaction is show in Table 3.

No	Question	Importance	Performance	Percentage	Criteria
1	Q-01	60	49	81.67%	Very Good
2	Q-02	61	51	83.61%	Very Good
3	Q-03	61	52	85.25%	Very Good
4	Q-04	60	52	86.67%	Very Good
5	Q-05	62	52	83.87%	Very Good
6	Q-06	62	52	83.87%	Very Good
7	Q-07	61	52	85.25%	Very Good
	Average	61,00	51.43	84.31%	

Table 3. Result of User Satisfaction

Furthermore, Table 3 contains the results of the data regarding the user satisfaction assessment of seven questions (Q-01 to Q-07) based on the importance of the question, the performance provided, the percentage of achievement, and the criteria set. Each question was given an importance score that varied between 60 to 62, while the performance of the question was rated between 49 to 52. The achievement percentage for each question ranged from 81.67% to 86.67%, indicating excellent results. The average importance score was 61.00, the performance was 51.43, and the achievement percentage was 84.31%. The overall user satisfaction assessment results can be categorized as "Very Good" based on the criteria set. This data shows that users are satisfied with the questions asked and feel good performance in meeting their expectations. Average of Importance and Performance SINERGI UPI is show in Table 4.

No	Question	Importance	Performance	Gain
1	Q-01	4.62	3.77	0.85
2	Q-02	4.69	3.92	0.77
3	Q-03	4.69	4.00	0.69
4	Q-04	4.62	4.00	0.62
5	Q-05	4.77	4.00	0.77
6	Q-06	4.77	4.00	0.77
7	Q-07	4.69	4.00	0.69
	Average	4.69	3.96	0.74

Table 4. Average of Importance and Performance SINERGI UPI

For the results in Table 4, the data provided is an average of the importance and performance of SINERGI UPI (Universitas Pendidikan Indonesia) in dealing with various questions (Q-01 to Q-07). Each question is rated based on its importance, the performance given, and the gain between the importance and performance. The importance scores ranged from 4.62 to 4.77, while the performance was 3.77 to 4.00. The gain score, i.e., the difference between importance and performance, varied from 0.62 to 0.85. The average importance score was 4.69, while the average performance was 3.96. The average gain score obtained was 0.74. This data shows that UPI SINERGI is considered to have a high level of importance in answering the questions asked. However, there is still room to improve performance to meet or exceed the expected importance level. Therefore, it is necessary to take corrective measures to improve performance and achieve more optimal results per the expectations set. Result of Importance Performance Analysis (IPA) Analysis is show in Figure 2.

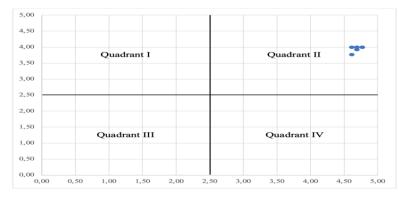


Figure 2. Result of Importance Performance Analysis (IPA) Analysis

Base on Figure 2, in Quadrant 2 of the IPA (Importance Performance Analysis), variables have a high level of importance, but performance has not reached the same level. In the given data, the average importance of the variables is 4.69, while the average performance is 3.96. This shows that the variables are important, but the current performance is still below expectations. Based on the data, it can be concluded that SINERGI needs to maintain reasonable efforts in meeting users' high level of importance. Although the current performance has not reached the expected level, positive results have been achieved in some aspects. Quadrant 2, which is "Keep Up the Good Work", means that the services provided are very satisfying, so the SINERGI website must be able to maintain the quality of these services steps to improve and improve performance need to be taken to ensure that performance is in line with the level of importance. Thus, positive and high-quality efforts can be maintained to provide satisfaction and added value for users.

Discussion

Based on the research results presented previously, it is worth noting that in the FIP environment, the user satisfaction of SINERGI in the FIP UPI environment has been satisfied with the SINERGI facility. This is certainly a success in itself from the establishment of SINERGI. It is known that user satisfaction affects various things. One paradigm shift encourages the formation of standard operating procedures (SOPs) focused on user satisfaction to increase the score owned in user satisfaction (Gultom, 2018; Rosidin et al., 2019). In addition, mentioned that good web quality can be considered successful if it meets the user's expectations of the owner, meaning that user satisfaction is a part that must be considered.

As previously described, the results of this study show a high value. Even though there are differences in the results of the seven questions, it is known that the results that have the highest value are related to the time waiting for users when opening the SINERGI website. Opening the website relatively quickly can minimize time and make the SINERGI website responsive, where the website responds quickly (Luo et al., 2021; Magalhaes et al., 2023). Responsive itself becomes one of the assessments of the quality of a website. Even so, not infrequently, the responsive assessment of a website collides with the desired design, as it is known that design prioritized user needs rather than responsiveness. Even so, a burdensome design that inhibits website use is considered bad, so there needs to be a balance between the two (Bentlage et al., 2020; Magalhaes et al., 2023).

A responsive website can be easily accessed from various devices and web browsers. There are also questions about accessing the SINERGI website, which can be accessed from various devices. The results show that the website has very good criteria for accessing with a high percentage, as seen in Table 3. On its performance, it should be noted that the appearance of SINERGI itself should be considered for development. The appearance of SINERGI now has a good appearance, but some improvements are still needed to support the activities and satisfaction of the users themselves. As is known, there are indicators of assessment of the quality of design on the website, ranging from color, image, sound, video, text, and attractiveness to feasibility that must be considered in the website display (Wendel, 2020; Xiao et al., 2018). The information available and the usefulness of the information on SINERGI itself has a good value, so the SINERGI website fulfills the information quality aspect where the quality on the website follows the information needed by users such as accuracy, format to relevance. However, besides being innovative, a website must be communicative and interactive (Saurik et al., 2019; Shahid et al., 2022).

Importance and performance SINERGI UPI has a relatively high average result. The performance itself has a lower value than importance, meaning that improvements are needed to improve the performance of the SINERGI website so that it can meet the users' needs. In its application, several things can be improved to be added to the SINERGI website. This suggestion can undoubtedly be taken into consideration for SINERGI developers to be able to improve their quality (Razzano et al., 2023; Yuniarti et al., 2022). SINERGI itself currently does not have a notification feature to notify users via SMS up to WhatsApp; in addition to having a notification feature, it is also expected that there will be a similar feature in the SIKD application, namely archive management starting from the creation to the depreciation of archives that can be carried out electronically. User-friendly is one aspect where users can easily use the desired features on the website, one of which is the notification so that user satisfaction can be achieved better (Bahadur & Boodun, 2013; Challob, 2021).

Moreover, users also hope for the development of a classification code that can facilitate the grouping of letters. SINERGI has the disadvantage of not having an archive classification code like SIKD, which can help group letters according to their aims and objectives. Along with research by, the SIKD UPI website quality is categorized as good based on usability, information quality, and service interaction quality. In line with this, suggest that in research on SIKD, the usability testing aspect is also included in the good category (Magalhaes et al., 2023; Riyanto, 2015). So, in terms of using SIKD, it is an e-letter application that makes it easy for users to find archives quickly, but it has problems with the internet network. It does not have notifications in the form of chat / SMS on cell phones. Regarding the input given, it will undoubtedly affect several parts, but it is hoped that this can be one of the references in the future development of SINERGI.

SINERGI itself is currently only effective in 2023. This new implementation certainly impacts aspects of use in the FIP environment. SINERGI facilitates correspondence management and is considered more effective and efficient. The updates of SINERGI also certainly bring up other responsibilities from the developer, namely in the socialization of SINERGI itself. The SINERGI website will undoubtedly be different from the previous archive management that users have frequently used. For this reason, gradual socialization is needed for each unit so that SINERGI can be used effectively and freely by its users. One of the essential assessment aspects of a website is that it is easy to use users. The academic community involved in this research also provided other suggestions in the form of further workshops regarding using SYNERGI at a higher level. The familiarization can undoubtedly be a place for developers to provide further direction and guidance so that each unit at UPI can use the SINERGI website to the fullest. Furthermore, it is hoped that SINERGI, in the future, can continue to improve performance and meet the needs of its users.

4. CONCLUSION

The utilization of SINERGI in the UPI environment is still relatively new because it began to be effectively implemented in 2023. However, the SINERGI website has shown very good results in user satisfaction. Even so, there are still developments that need to be further improved by SINERGI in order to

maintain and improve the assessment obtained. Several recommendations are related to the features needed, starting from notifications appearing via SMS to WhatsApp, as well as the suggested application of menus on the SINERGI website that can facilitate users when using it. In addition, it is also expected that there will be continuous training and familiarization of users in the morning so that they can understand SINERGI better. Recommendations for further studies can be examined related to the application of SINERGI in the UPI environment as a whole and the impact of the application of SINERGI on an ongoing basis.

5. REFERENCES

- Alfian, A. N., Putra, M. Y., Arifin, R. W., Barokah, A., Safei, A., & Julian, N. (2022). Pemanfaatan Media Pembelajaran Audio Visual berbasis Aplikasi Canva. Jurnal Pengabdian Kepada Masyarakat UBJ, 5(1), 75–84. https://doi.org/10.31599/jabdimas.v5i1.986.
- Ariono, B., Wasesa, M., & Dhewanto, W. (2022). The Drivers, Barriers, and Enablers of Building Information Modeling (BIM) Innovation in Developing Countries: Insights from Systematic Literature Review and Comparative Analysis. *Buildings*, 12(11), 1-22. https://doi.org/10.3390/buildings12111912.
- Bahadur, G. K., & Boodun, S. S. (2013). Using powerpoint presentations as a tool for effective teaching and learning of water science for upper primary pupils in mauritius. *International Journal of Science, Mathematics and Technology Learning*, 19(2), 65–78. https://doi.org/10.18848/2327-7971/cgp/v19i02/48988.
- Bentlage, E., Ammar, A., Chtourou, H., Trabelsi, K., How, D., Ahmed, M., & Brach, M. (2020). Practical recommendations for staying physically active during the COVID-19 pandemic: A systematic literature review. *MedRxiv*, 17(Aug), 1–22. https://doi.org/10.1101/2020.06.24.20138313.
- Challob, A. I. (2021). The effect of flipped learning on EFL students' writing performance, autonomy, and motivation. *Education and Information Technologies*, 26(4), 3743–3769. https://doi.org/10.1007/s10639-021-10434-1.
- Desnanjaya, I. G. M. N., & Nugraha, I. M. A. (2021). Design and Control System of Sluice Gate With Web-Based Information. 2021 International Conference on Smart-Green Technology in Electrical and Information Systems (ICSGTEIS), 52–57. https://doi.org/10.1109/ICSGTEIS53426.2021.9650409.
- Duklim, B., & Musigrungsi, S. (2018). Oral presentation performance and strategies employed by students in an international classroom context. *Songklanakarin Journal of Social Sciences and Humanities*, 24(1), 39–74. https://so05.tci-thaijo.org/index.php/psujssh/article/view/127909.
- Gormally, C., Brickman, P., & Lutz, M. (2012). Developing a Test of Scientific Literacy Skills (TOSLS): Measuring Undergraduates' Evaluation of Scientific Information and Arguments. *CBE Life Sciences Education*, 11(4), 364–377. https://doi.org/10.1187/cbe.12-03-0026.
- Gultom, R. (2018). Analisis Penggunaan Alat Pelindung Diri (APD) dalam Keselamatan dan Kesehatan Kerja (K3) Proyek Kontruksi di PT. Eka Paksi Sejati . Studi Kasus : Proyek Kontruksi untuk Pemboran Sumur EksploirasiTitanum (TTN-001) Daerah Aceh Tamiang. Jurnal Bisnis Corporate, 3(1), 92– 124. https://doi.org/10.46576/jbc.v3i1.377.
- Hamdani, M. S., Wardani, M., & Widi, K. (2019). Penerapan Model Pembelajaran Team Games Tournamen (TGT) pada Pembelajaran Tematik Terpadu Kelas 5 untuk Peningkatan Keterampilan Kolaborasi. Jurnal Ilmiah Sekolah Dasar, 3(4), 440. https://doi.org/10.23887/jisd.v3i4.21778.
- Hoesny, M. U., & Darmayanti, R. (2021). Permasalahan dan Solusi Untuk Meningkatkan Kompetensi dan Kualitas Guru : Sebuah Kajian Pustaka. *Scholaria : Jurnal Pendidikan Dan Kebudayaan*, 11(2), 123– 132. https://ejournal.uksw.edu/scholaria/article/view/3595.
- Lesva, O., & Arif, A. (2020). Sistem Informasi Wisata Purbakala Situs Megalithikum Kota Pagaralam, Sumatera Selatan. *JUSIM (Jurnal Sist. Inf. Musirawas)*, 5(2), 111–123. http://download.garuda.kemdikbud.go.id/article.php?article=2104834&val=15085.
- Luo, Z., Brown, C., & O'Steen, B. (2021). Factors contributing to teachers' acceptance intention of gamified learning tools in secondary schools: An exploratory study. *Education and Information Technologies*, 26(5), 6337–6363. https://doi.org/10.1007/s10639-021-10622-z.
- Magalhaes, A. D., Sopwandin, I., & Bakri, A. A. (2023). Online training application design with website-based blended learning system method. *Journal of Information System, Technology and Engineering*, 1(2), 43–48. https://doi.org/10.61487/jiste.v1i2.19.
- Mazloumi, A., Mehrdad, R., Kazemi, Z., Vahedi, Z., & Hajizade, L. (2021). Risk Factors of Work Related Musculoskeletal Disorders in Iranian Workers during 2000-2015. *Journal of Health and Safety at Work*, *11*(3), 395–416. https://dl.hsenk.ir/uploads/2022/08/HSEnk-1558.pdf.
- Mentzakis, E., Tkacz, D., & Rivas, C. (2020). A proof-of-concept framework for the preference elicitation and evaluation of health informatics technologies: The online PRESENT patient experience dashboard as a case example. *BMC Medical Informatics and Decision Making*, 20(1).

https://doi.org/10.1186/s12911-020-1098-z.

- Mouakket, S., & Sun, Y. (2020). Investigating the Impact of Personality Traits of Social Network Sites Users on Information Disclosure in China: the Moderating Role of Gender. *Information Systems Frontiers*, 22(6), 1305–1321. https://doi.org/10.1007/s10796-019-09933-x.
- Mubyl, M., & Dwinanda, G. (2019). Peran subjective well-being , kepemimpinan transformasional dan komitmen organisasional dalam memprediksi kinerja karyawan. *Jurnal Bisnis & Kewirausahaan*, 8(1), 74–85. http://e-jurnal.nobel.ac.id/index.php/jbk/article/view/502.
- Ofei, A. M. A., Paarima, Y., & Barnes, T. (2020). Exploring the management competencies of nurse managers in the Greater Accra Region, Ghana. *International Journal of Africa Nursing Sciences*, *13*(September 2020), 100248.1-7. https://doi.org/10.1016/j.ijans.2020.100248.
- Oláh, J., Aburumman, N., Popp, J., Khan, M. A., Haddad, H., & Kitukutha, N. (2020). Impact of industry 4.0 on environmental sustainability. *Sustainability (Switzerland)*, *12*(11), 1–17. https://doi.org/10.3390/su12114674.
- Razzano, M., Di Renzo, F., Fidecaro, F., Hemming, G., & Katsanevas, S. (2023). GWitchHunters: Machine learning and citizen science to improve the performance of gravitational wave detector. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1048*, 167959. https://doi.org/10.1016/j.nima.2022.167959.
- Riyanto, A. D. (2015). Pembuatan Website Sebagai Media Promosi Yang Terpercaya. *In Seminar Nasional Informatika (SEMNASIF)*. http://103.23.20.161/index.php/semnasif/article/view/1362.
- Rohmah, F. N., & Bukhori, I. (2020). Pengembangan Media Pembelajaran Interaktif Mata Pelajaran Korespondensi Berbasis Android Menggunakan Articulate Storyline 3. *ECOEDUCATION (Economic & Education Journal)*, 2(2), 169–182. https://doi.org/10.33503/ecoducation.v2i2.892.
- Rosidin, U., Herpratiwi, Suana, W., & Firdaos, R. (2019). Evaluation of National Examination (UN) and National-Based School Examination (USBN) in Indonesia. *European Journal of Educational Research*, 8(3), 827–837. https://doi.org/10.12973/eu-jer.8.3.827.
- Saurik, H. T. T., Purwanto, D. D., & Hadikusuma, J. I. (2019). Teknologi Virtual Reality untuk Media Informasi Kampus. *Jurnal Teknologi Informasi Dan Ilmu Komputer*, 6(1), 71. https://doi.org/10.25126/jtiik.2019611238.
- Sedrakyan, G., Malmberg, J., Verbert, K., Järvelä, S., & Kirschner, P. A. (2020). Linking learning behavior analytics and learning science concepts: Designing a learning analytics dashboard for feedback to support learning regulation. *Computers in Human Behavior*, 107, 105512. https://doi.org/10.1016/j.chb.2018.05.004.
- Seixas, B. V., Smith, N., & Mitton, C. (2018). The qualitative descriptive approach in international comparative studies: Using online qualitative surveys. *International Journal of Health Policy and Management*, 7(9), 778–781. https://doi.org/10.15171/ijhpm.2017.142.
- Shahid, C., Abbasi, I. A., & Bhutto, S. (2022). Improving Communicative Competence through CLT Approach in Second Language Learning at the Undergraduate Level. *Pakistan Journal of Humanities and Social Sciences*, 10(4), 1472–1486. https://doi.org/10.52131/pjhss.2022.1004.0305.
- Supandi, M., & Senam, S. (2019). Mengembangkan keterampilan berpikir kritis dengan game ritual tumpe. *Jurnal Inovasi Pendidikan IPA*, *5*(2), 139–146. https://doi.org/10.21831/jipi.v5i2.25920.
- Suryana, A., Karim, A. A., & Sapriya, S. (2018). Manajemen Capacity Building Tenaga Administrasi Sekolah Di Sekolah Laboratorium Upi. *Pedagogia*, 15(3), 250265. https://doi.org/10.17509/pdgia.v15i3.11021.
- Virvou, M., Katsionis, G., & Manos, K. (2005). Combining Software Games with Education: Evaluation of its Educational. *Educational Technology & Society, 8*(2), 54–65. https://www.jstor.org/stable/pdf/jeductechsoci.8.2.54.pdf.
- Welch, C., & Piekkari, R. (2017). How should we (not) judge the 'quality' of qualitative research? A reassessment of current evaluative criteria in International Business. *Journal of World Business*, 52(5), 714–725. https://doi.org/10.1016/j.jwb.2017.05.007.
- Wendel, A. C. (2020). An Exploration of the Numeracy Skills Required for Safe, Quality Nursing Practice. In *ProQuest Dissertations and Theses.*
- Xiao, Y., Han, J., Koenig, K., Xiong, J., & Bao, L. (2018). Multilevel Rasch modeling of two-Tier multiple choice test: A case study using Lawson's classroom test of scientific reasoning. *Physical Review Physics Education Research*, 14(2). https://doi.org/10.1103/PhysRevPhysEducRes.14.020104.
- Yuniarti, Y., Yulian, R., & Yuniarti, Y. (2022). Digital Story Telling Based on Multimodal Elements on EFL Learners' Speaking Performance. JPI (Jurnal Pendidikan Indonesia), 11(2), 308–316. https://doi.org/10.23887/jpiundiksha.v11i2.40217.