

Mobile Application for Vocational Job Vacancies Innovation: Applying Creative Critical Canvas

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ABSTRACT

This research aims to improve the connection between vocational universities and industries in South Kalimantan through the development of a job vacancy test platform. By applying the concept of “link and match”, this research identifies the needs of vocational universities and industry. The method used is Creative Critical Canvas, which includes six stages: parse, deviate, modify, verify, compare, and conclude. The results showed that current job vacancy announcements still face problems in terms of information dissemination and complicated application procedures. The innovative solution in the form of an automation system and user experience validation was successfully tested by involving 66 respondents, resulting in validation scores that showed a good interface but required minor revisions at the ease of use and user friendly before continuing development at the coding stage. This research also concluded that Creative Critical Canvas is effective as a framework in creating innovation and can be used for digital product development.

Keywords: Job Vacancy, Mobile-based Test, User Experience Design, Vocational.

INTRODUCTION

Vocational Universities in South Kalimantan (Kalsel) continue to strive to improve the connection between vocational and industry. This is so that the expected “link and match” concept can be realized more realistically. Some of the things that Vocational Universities need from the industry include curriculum development, internship opportunities, training of teaching assistants, involvement in research, donation of equipment, and absorption of graduates. On the other hand, industry also needs skilled graduates. Thus, this connection can start from what is most mutually needed, namely graduates. Indonesia itself is a huge market for recruiting employees with around 203 million productive people (Asa et al., 2023).

Geographical connectivity was also found to be a factor influencing the alignment of education with work (Di Paolo, Matas and Raymond, 2017). Companies in South Kalimantan are spread across various regencies, so connecting job vacancies requires an online system that is not limited by distance and time (Setiawati, 2018). Currently, Hasnur Polytechnic together with KADIN South Kalimantan are developing a platform for job vacancy tests to increase the absorption of vocational graduates in the industry while mapping the needs of human resources (HR) in South Kalimantan. This innovation is essential for sustainability and growth (Shamzzuzoha et al., 2022). However,

determining the specifications of the system to be built is an important prerequisite that needs to be considered.

KADIN Kalsel is the parent organization that gathers various business associations and organizations, such as in the mining sector, information technology, housing developers, plantations, construction, media, and others. By collaborating with KADIN, it is hoped that the platform developed can be more quickly filled by various companies collectively. In addition, the platform will also serve as a data collection for KADIN to monitor the job market map ([Giambona et al., 2024](#)), especially of its member companies. In the long run, the collection of job vacancy test questions can be a very valuable source of information for Vocational Universities in understanding the changing needs of the industry, so as to bridge Vocational Universities learning standards and standards expected by companies. A map of the skills, experience, and qualifications sought is necessary to avoid gaps and mismatches in the profession ([Smaldone et al., 2022](#)). The hope is that the system developed can ensure right skills to the right people at the right time ([Rikala et al., 2024](#)).

Determining the necessary features and designing a good user experience design was the focus of this study, in order to accommodate the needs of all users involved. This stage is very important before the coding process begins ([Andiny, Fitri and Rubhasy, 2021](#)). This is to avoid many revisions after development, and to increase the chances of graduate and industry acceptance.

RESEARCH METHOD

This research flow was carried out with reference to the Creative Critical Canvas (see Figure 1), which is a one-page worksheet consisting of several blocks. The first block contains the problem identification, while the last block includes the selected solution. The research completion process was carried out by filling in each block procedurally, while performing creative thinking activities (C1, C2, C3) to generate various alternatives, and critical thinking (C4, C5, C6) to determine the best alternative ([Ridhoni et al., 2021](#)). During the development of the research process, the use of this canvas allows the researcher to easily monitor which stages are filled and which still need to be worked on.

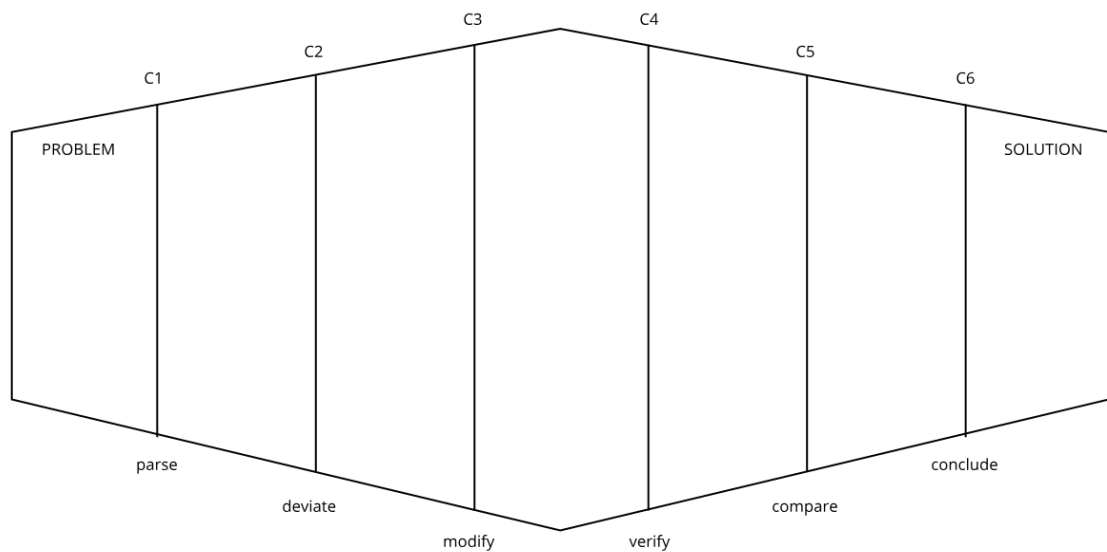


Figure 1. Creative Critical Canvas

In the parse stage (C1), the problem to be solved is broken down into small parts, so that the real root of the problem can be found. The formulation of the problem in this research is how to make industrial job vacancies more connected to vocational training. From the problem, the starting point for the solution can be described. After the decomposition process is carried out and which part is the root of the problem is clear, then enter the deviate stage (C2). This stage is done creatively, providing space for various solution ideas to be written on the canvas. The process that is usually done in a job test will be changed to find new ways that are more effective.

Refinement of ideas is then done through the modify (C3) stage. At this stage, if at the deviate stage a new solution is created, at the modify stage innovations are made while still referring to the new direction that has been set. Modifications may include rearranging the sequence of operations, changing the quality (such as quantity, dimension, or duration), replacing a component, or rearranging an existing combination. The expected result of this stage is a prototype that is ready to be tested. At the verify stage (C4), research activities begin with critical thinking. The resulting prototype is tested, so that it is not only based on assumptions, but also supported by facts and proof of validation results in the field. Testing criteria refer to three aspects of user experience, namely ease of use, user friendly, and aesthetic (Ridhoni and Anggraini, 2023). Testing is conducted using a Likert scale, where “Strongly Disagree” is worth 1 to “Strongly Agree” is worth 5.

The test results are organized based on the highest to lowest value, so that the ranking of the three aspects of user experience can be known. Furthermore, the test results are also compared (compare, C5) with the validation criteria to determine whether the results are valid to proceed to the coding stage or not. The final stage in the Creative Critical Canvas is conclude (C6), where decisions are made based on the sorted test results. The best solution is the alternative that is ranked highest in the test.

RESULTS AND DISCUSSION

The results and discussion obtained from this research follow the stages as the research method, arranged from Parse (C1) to Conclude (C6).

C1. Parse

Current job vacancy announcements are generally in the form of advertisements and application files uploaded through recruitment websites or emails. After filtering based on the review of one document after another, candidates who meet the criteria are obtained and proceed to the test and interview stage. Figure 2 below is an example of a job advertisement.

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- Usia maksimal 30 Tahun
- Laki - laki/Perempuan
- Berpengalaman minimal 1 Tahun (Fresh Graduate Dipersilahkan Melamar)
- Menguasai laporan keuangan dan analisa
- Mampu presentasi, mengolah dan menyajikan data analisa
- Menguasai MS. Office & Excel (Terapan)
- Mampu bekerja secara team
- Mampu berkomunikasi Bahasa Inggris aktif
- Jujur, bertanggung jawab, memiliki loyalitas dan Integritas tinggi
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(Harap menuliskan kode #FA, BJM di amplop pojok kanan atas)
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Deadline 29 Februari 2024

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LOWONGAN PEKERJAAN

Posisi : NUTRITIONIST / AHLI GIZI

Penerimaan Karyawan Baru PT. BERSAMA UKHUWAH SEJAHTERA (Jalan Tol Lingkar Dalam Selatan, Pemurus Baru, Banjarmasin Selatan, Banjarmasin Kalimantan Selatan, 70249)

Kualifikasi :

- Muslim/ Muslimah Usia Maksimal 30 Tahun
- Pendidikan Minimal S1 Ahli Gizi
- Memiliki STR Yang Aktif
- Sehat Jasmani dan Rohani
- Teliti, Jujur dan Bertanggung Jawab
- Memiliki Kemampuan Komunikasi Yang Baik
- Dapat bekerja secara individu/ tim dan mampu bekerja dibawah tekanan
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Benefit :

- GAJI diatas UMP
- BPJS Ketenagakerjaan dan BPJS Kesehatan
- Makan Siang

Pendaftaran Dengan Mengisi Link :
<https://bit.ly/lokerptbus>
Paling Lambat Tanggal 31 Desember 2023

Figure 2. Example of Job Advertisement

Some of the problems that arise with this kind of announcement pattern can be described as: (1) announcements are not well targeted. Information about available job vacancies is often not properly conveyed to vocational graduates, thus preventing them from finding opportunities, (2) Submission of documents is full of rules. Errors in writing format cause applicants to miss opportunities, and (3) Candidates lose interest in applying due to the large number of requirements/qualifications, causing potential candidates to not submit applications.

C2. Deviate

Based on the three findings obtained from the Parse stage, an integrated idea was developed to optimize the recruitment process. First, graduates are accompanied by proof of diploma numbers listed by the Study Program, allowing companies to select which study programs can participate in job tests. Notifications are then sent directly to each graduate's cellphone according to their study program, ensuring more targeted job information delivery. Push notifications, which were previously considered optional (Asa et al., 2023), are now regarded as essential in this study. Second, the job application process has been automated through a single "Apply" button on each job posting, making it more efficient once the applicant's curriculum vitae is completed. Since self-presentation significantly influences recruiters' perceptions (Chiang & Suen, 2015), each job posting includes key details such as location, salary range, and position requirements (Putrama & Martinek, 2023). Third, an initial test is introduced to assess basic skills and knowledge relevant to the job position, particularly digital and soft skills vital in the Industrial Revolution 4.0 era (Aljohani et al., 2022), as well as self-organization, technical, and interpersonal abilities that are fundamental in most occupations (Usabiaga et al., 2022). Once the test results are available, the company can contact candidates through the Study Program or directly if additional documents or further tests are required.

C3. Modify

Idea refinement was carried out to ensure that the required features could accommodate the ideas derived from the deviate stage. As a result, the developed mobile application was designed to include three main features: first, notifications that appear whenever there is a new announcement relevant to the user's study program; second, a list of job vacancies automatically filtered according to the study program, each equipped with an "Apply" button for efficient application submission; and third, an integrated testing feature that restricts users from exiting the application during the test and allows for remote supervision. The interface, designed using Figma, produced several example pages as shown in Figure 3, covering screens from Login to Test List. The buttons on each designed page are interconnected with corresponding pages to form a functional prototype. Although the prototype does not yet include dynamic data, it effectively provides a clear and practical visualization for potential users of how the application will operate.

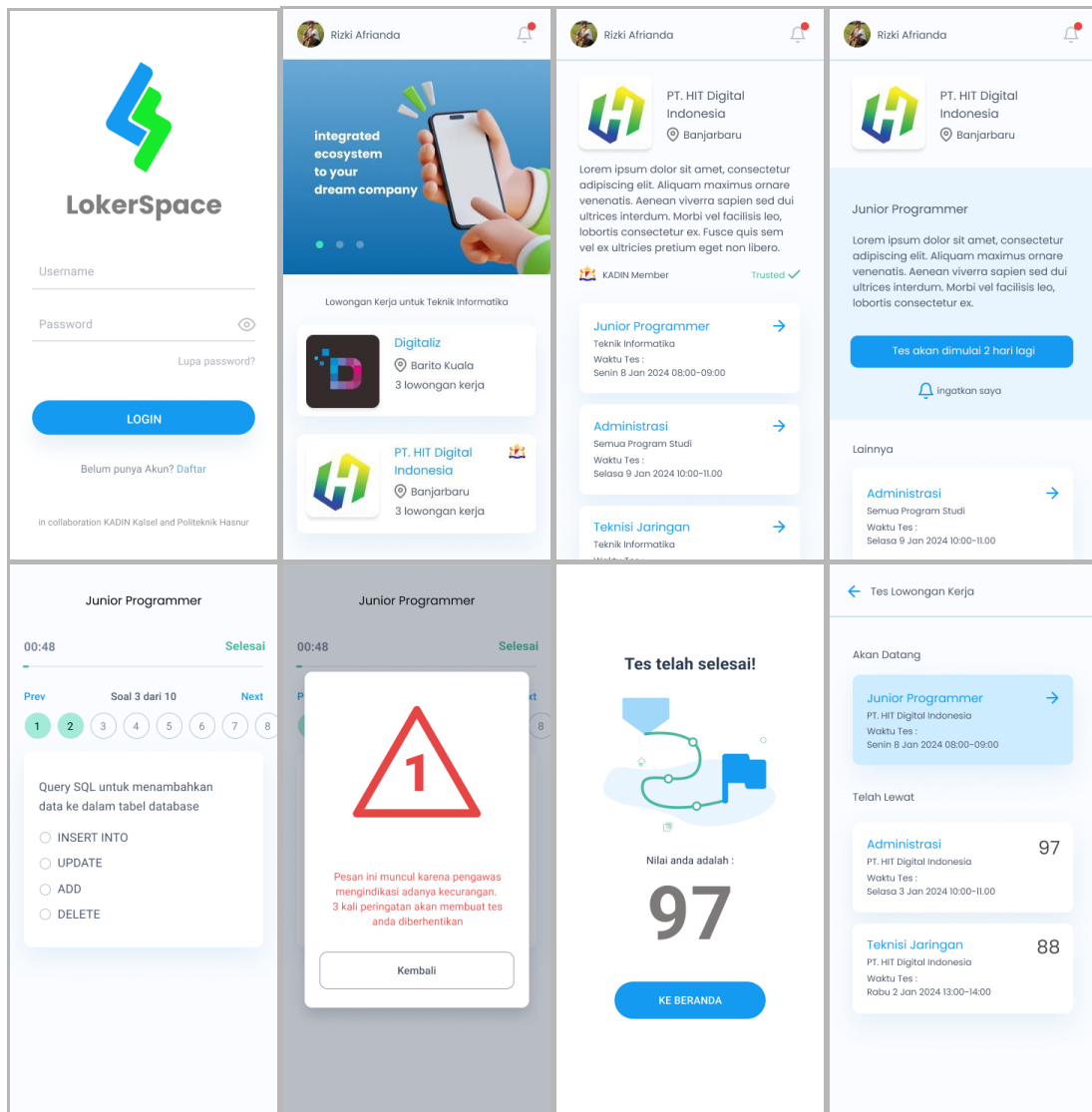


Figure 3. Design Result

When the application is operated for the first time, users are asked to log in using the username and password provided by the Study Program. Graduates will receive notifications regarding tests relevant to their study program and can only view upcoming vacancies, complete with logo, name, company location, and number of vacancies, as well as an information banner from the admin.

More details about the test can be found on the company profile, and graduates have the option to select the vacancies they wish to take and request reminders before the test starts. Test questions are downloaded to the local device memory to avoid interruptions from the internet connection. During the test, participants can view their display through the front-facing camera, and once the invigilator starts the test, they can answer questions with the help of a timer and an indicator of questions that have been answered.

Participants will be warned if cheating is indicated, with a maximum limit of three warnings. After the third warning, participants will be excluded from the test. The test

results will be displayed after the time runs out or if the participant presses “Done,” and are calculated based on the number of correct answers. In addition, participants can view their previous test scores as well as their upcoming test schedule.

C4. Verify

After the interface has been designed, the next step is to carry out testing involving respondents. A total of 66 students participated in the User Experience testing, consisting of 25 males (37.9%) and 41 females (62.1%). Respondents accessed the prototype page link on Figma to explore the various pages. Next, they filled out Google Forms to rate the statements on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree). The list of statements used can be seen in Table 1.

Table 1. Questionnaire Statement Items

Item	Statement
Ease of Use	
E-1	The app is concise and there are no steps that make things difficult for me
E-2	This app helps me automate things that I need to do
User	
Friendly	I feel comfortable with the communication language used in this app
U-1	I feel the app pays attention to me as a user
U-2	
Aesthetic	
A-1	The combination of color schemes used is appropriate
A-2	The layout of images, text, and other elements looks neat

A recapitulation of the answers from 66 respondents, which ranged from “Strongly Disagree” with a value of 1 to “Strongly Agree” with a value of 5, is shown in the frequency table of questionnaire responses in Table 2.

Table 2. Frequency of Respondents' Answers

Criteria	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Ease of Use	E1	0	1	8	45	12
	E2	0	0	13	45	8
User Friendly	U1	0	2	12	36	16
	U2	0	1	21	33	11
Aesthetic	A1	0	0	10	38	18
	A2	0	1	5	36	24

C5. Compare

The cumulative results of 66 respondents, in the range of 0-100, show the average scores listed on the graph in Figure 4. The average scores for the Ease of use variable are 79.55, User friendly 78.18, and Aesthetic 83.8, with an overall average of 80.5. In user experience, the Ease of use score indicates the success of the Flow stage, the User friendly score measures the success of the Low-Fidelity stage, and the Aesthetic score indicates the success of the Interface stage. If the Ease of use score is invalid, the Flow process needs to be improved as there are steps that make it difficult for users and require further automation. Similarly, if the User friendly score is invalid, the Low-Fidelity process should be improved, as the sketches do not yet reflect a personal touch with pleasant language. Finally, if the Aesthetic score is still invalid, improvements to the Interface stage are needed, especially in terms of inadequate color combinations and layout.

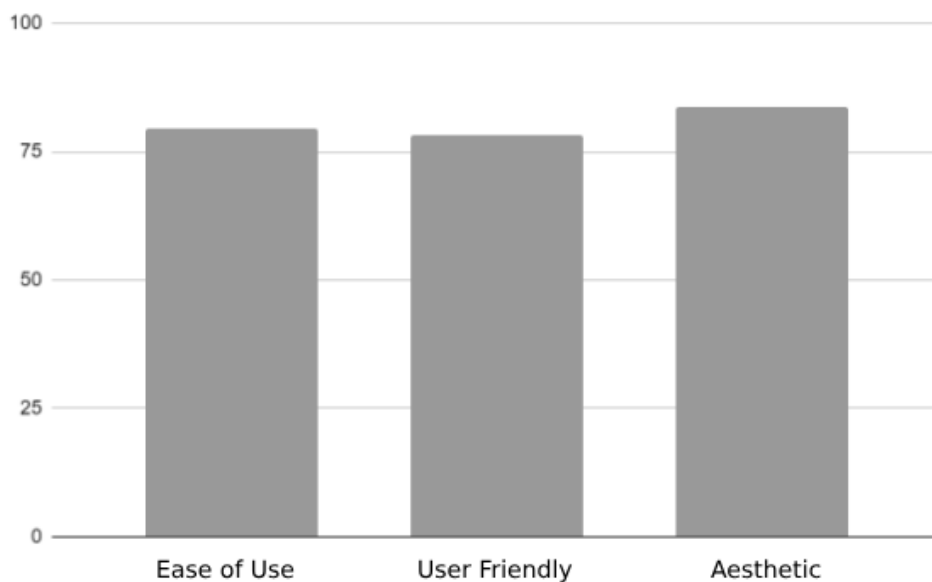


Figure 4. User Experience Testing Results

Based on the validation assessment presented in Table 3, the test results show that both criteria, namely Easy and Friendly, have met the valid category. Meanwhile, the Beautiful criterion exceeds the valid category and falls into the highly valid category.

Table 3. Frequency of Respondents' Answers

Value	Description
< 20	Very Invalid, Cannot be used
20,1 - 40	Invalid, Cannot be used
40,1 - 60	Less Valid, Can be used but needs major revision
60,1 - 80	Valid, Can be used but needs minor revision
80,1 - 100	Very Valid, Can be used without revision

C6. Conclude

Comparison to the validation assessment shows that the design in terms of interface, color combination and layout is very good. Minor revisions are needed to improve some steps that are still a little difficult for users or require more automation. Similarly, additional editorial is needed to add an emotional touch. The entire Creative Critical Canvas that has been filled in at all stages is shown in Figure 5 below.

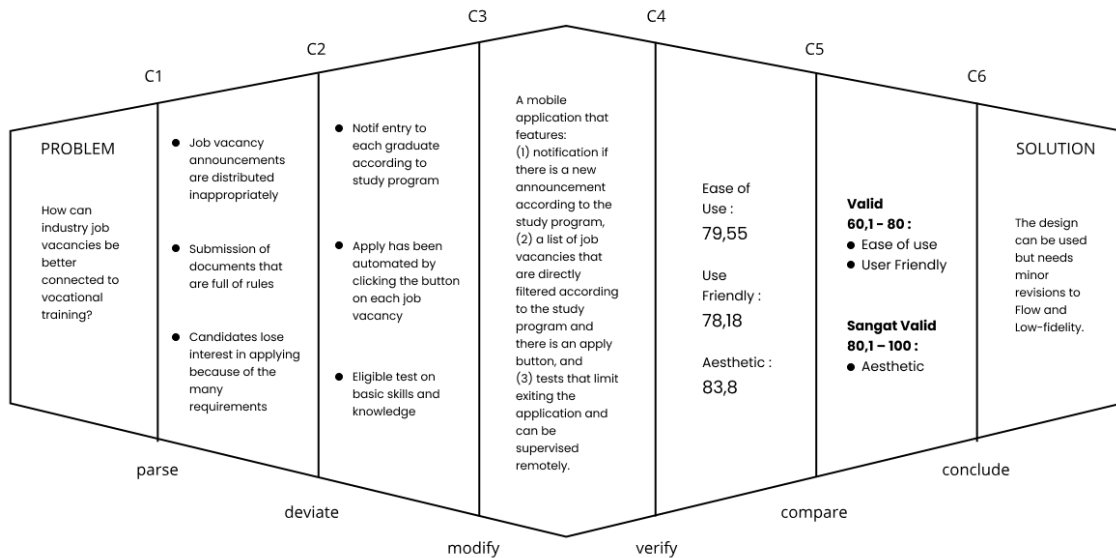


Figure 5. Fully Creative Critical Canvas result

Discussion

The results of this study highlight the importance of integrating digital innovation into the vocational recruitment ecosystem in South Kalimantan. The analysis through the Creative Critical Canvas method revealed that the gap between vocational graduates and industry needs lies primarily in the inefficiency of information delivery and recruitment procedures. This finding aligns with [Giambona et al. \(2024\)](#), who emphasized that skill mapping through online platforms can significantly reduce the mismatch between education and labor market requirements. Furthermore, the platform designed in this study bridges the gap between institutions and companies by providing structured data on graduate qualifications and job availability, thus operationalizing the “link and match” concept proposed by [Shamzzuzoha et al. \(2022\)](#) and [Rikala et al. \(2024\)](#) regarding sustainable vocational-industrial synergy.

The implementation of an automated application system through an “Apply” button and personalized notifications was proven to increase accessibility and engagement among graduates. This corresponds with [Asa et al. \(2023\)](#), who found that mobile-based recruitment platforms enhance user responsiveness when equipped with real-time push notifications. The ability of graduates to apply efficiently by completing a single curriculum vitae reflects findings from [Chiang and Suen \(2015\)](#) that digital self-presentation shapes recruiters’ perceptions of candidate professionalism. Furthermore, the automatic filtering of vacancies based on study programs reduces information

overload and directs job opportunities more effectively, a concept also supported by [Putrama and Martinek \(2023\)](#) who emphasized the role of content-based graph learning in aligning users with relevant opportunities.

The interface design using Figma demonstrates the practicality of low-fidelity prototyping in producing a user-oriented system. According to [Andiny, Fitri, and Rubhasy \(2021\)](#), early-stage UX design testing helps minimize revisions during the coding phase and increases acceptance among end users. The visual and interactive prototype designed in this study effectively communicates system flow and user interaction, even without dynamic data. The use of iterative validation aligns with [Ridhoni and Anggraini \(2023\)](#), who stated that iterative prototyping ensures usability optimization before the implementation stage. The positive results from 66 respondents—with average user experience scores above 78 in all indicators—confirm that the design already meets valid usability standards and only requires minor adjustments in the Flow and Low-Fidelity stages.

From an educational technology perspective, this study reinforces the relevance of vocational adaptation in the Industry 4.0 era. The introduction of preliminary digital tests to evaluate basic and soft skills reflects the competency demands discussed by [Aljohani et al. \(2022\)](#) and [Usabiaga et al. \(2022\)](#), who highlighted the increasing importance of digital literacy, communication, and self-organization. The integration of remote supervision and cheating prevention mechanisms also echoes best practices in online assessment systems found in studies by [Smaldone et al. \(2022\)](#) and [Setiawati \(2018\)](#). These features not only enhance fairness and security in recruitment testing but also align with current trends in AI-driven evaluation systems.

In addition to the findings from the original dataset, several recent studies strengthen the contribution of this research. [Zhou et al. \(2024\)](#) emphasized that intelligent recruitment platforms using adaptive interfaces can boost applicant motivation and trust. Similarly, [Nguyen and Kurniawan \(2023\)](#) highlighted that UX-based vocational platforms significantly increase employment rates among graduates. The findings by [Khan et al. \(2022\)](#) also support the importance of mobile integration for accessibility, particularly in regions with limited geographical connectivity like South Kalimantan. Furthermore, [Santoso and Dewi \(2024\)](#) argued that involving academic institutions as intermediaries in recruitment ensures better graduate readiness. Finally, [Lee et al. \(2023\)](#) demonstrated that combining data analytics with user-centered design can forecast employment trends, making the developed prototype highly relevant to future vocational-industry ecosystems.

CONCLUSIONS

Creative Critical Canvas has been used as a framework for creating innovations in the mobile application of vocational job vacancy tests in South Kalimantan. It is obtained that the design of a job vacancy test mobile application that has features: (1) notification if there is a new announcement according to the study program, (2) a list of job vacancies that are directly filtered according to the study program and there is an application button, and (3) a test that limits exiting the application and can be

supervised remotely. The design can be used but needs minor revisions to Flow and Low-fidelity.

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