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Developing a Career App Based on Students' Interests and Talents to Support Career Planning

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Abstract: Career planning is a fundamental component of students' development because it shapes their future educational and occupational pathways. In many schools, however, career planning is constrained by limited guidance services, students' low awareness of their interests and talents, and the scarcity of accessible career information media conditions that can lead to less informed career decisions. This study addresses a gap in prior digital career media, which often provide generic information without integrating a validated interest, talent mapping process, and counselor support functions; the novelty of the proposed application lies in combining interest talent profiling with personalized career information and counselor oriented features, thereby contributing conceptually to a data-informed and personalized model of digital based career guidance**.** Using a Research and Development (R&D) approach with the 4D model (Define, Design, Develop, Disseminate), data were collected through observations, interviews, a Student Career Media Needs Survey, and expert validations of content, design, and language. The findings indicate that the developed interest, and talent, based career information application achieved a very valid rating in both content relevance and usability. The application enables students to explore their strengths, identify suitable career options, and access information on study programs across universities. Moreover, its digital format supports guidance counselors in identifying students' potentials earlier and delivering more personalized career planning assistance. Overall, this application offers an effective and engaging tool for integrating technology into school based career guidance and making career exploration more meaningful, interactive, and aligned with contemporary learners' needs.

Abstrak: *Perencanaan karier merupakan komponen fundamental dalam perkembangan siswa karena membentuk jalur pendidikan dan pekerjaan mereka di masa depan. Namun, di banyak sekolah, perencanaan karier dibatasi oleh layanan bimbingan yang terbatas, kesadaran siswa yang rendah terhadap minat dan bakat mereka, dan kelangkaan media informasi karier yang mudah diakses, yang dapat menyebabkan pengambilan keputusan karier yang kurang tepat. Studi ini membahas kesenjangan dalam media karier digital sebelumnya, yang seringkali memberikan informasi umum tanpa mengintegrasikan proses pemetaan minat dan bakat yang tervalidasi, serta fungsi dukungan konselor; kebaruan aplikasi yang diusulkan terletak pada penggabungan profil minat dan bakat dengan informasi karier yang*

dipersonalisasi dan fitur berorientasi konselor, sehingga secara konseptual berkontribusi pada model bimbingan karier berbasis digital yang berbasis data dan personal. Dengan menggunakan pendekatan Penelitian dan Pengembangan (R&D) dengan model 4D (Definisikan, Rancang, Kembangkan, Sebarkan), data dikumpulkan melalui observasi, wawancara, Survei Kebutuhan Media Karier Siswa, dan validasi ahli terhadap konten, desain, dan bahasa. Temuan menunjukkan bahwa aplikasi informasi karier berbasis minat dan bakat yang dikembangkan mencapai peringkat yang sangat valid baik dalam relevansi konten maupun kegunaan. Aplikasi ini memungkinkan siswa untuk mengeksplorasi kekuatan mereka, mengidentifikasi pilihan karir yang sesuai, dan mengakses informasi tentang program studi di berbagai universitas. Selain itu, format digitalnya mendukung konselor bimbingan dalam mengidentifikasi potensi siswa lebih awal dan memberikan bantuan perencanaan karir yang lebih personal. Secara keseluruhan, aplikasi ini menawarkan alat yang efektif dan menarik untuk mengintegrasikan teknologi ke dalam bimbingan karir berbasis sekolah dan membuat eksplorasi karir lebih bermakna, interaktif, dan selaras dengan kebutuhan pelajar masa kini.

Keywords : *Career Information Application, Career Planning, Vocational Interests, Senior high school students*

INTRODUCTION

The rapid advancement of information and communication technology has profoundly influenced various sectors, including career guidance services (Atay et al., 2024**)**. In recent years, digital-based career guidance applications that integrate interest and talent assessment have emerged as strategic tools to support students in navigating increasingly complex and dynamic career landscapes (Latifah et al., 2024). Despite these technological developments, empirical evidence indicates that students' career planning competencies remain relatively low. Many students experience uncertainty and confusion when determining post-secondary education or career pathways, particularly at the transition stage from secondary education to higher education or the workforce (Sari & Dwiarwati, 2023). This condition is commonly associated with limited self-understanding, insufficient access to comprehensive career information, and difficulties in identifying personal interests and talents relevant to future occupations (Wulandari et al., 2023).

From a developmental perspective, Super's career development theory emphasizes that individuals, particularly during adolescence, are required to actively develop self-concepts related to interests, talents, and abilities as a foundation for future career planning (Putri et al., 2023). Career planning is not a single decision-making event but a continuous developmental process involving goal formulation, exploration of career alternatives, decision-making, and the implementation of concrete career-related actions (Nisya et al., 2023; Theodora et al., 2019). Inadequate engagement in this process often results in career indecision and psychological distress, including the emergence of a quarter-life crisis among university graduates who lack clear career direction (Aprilia et al., 2024)

Career planning encompasses several essential components, namely self-understanding, career exploration, and career decision-making. Self-understanding is a fundamental prerequisite, as individuals must recognize their interests, talents, and personal characteristics to select career paths aligned with their potential and aspirations (Elisabet Septia Atma et al., 2024). In line with Holland's theory of vocational personality, congruence between individual interests and

occupational environments plays a crucial role in predicting career satisfaction and stability. Therefore, systematic identification of interests and talents, accompanied by exposure to diverse career information, enables students to explore occupational options that are compatible with their personal profiles (Sukanta et al., 2024).

Career exploration represents an active process through which students seek information about various professions, educational requirements, labor market trends, and future career prospects (Nurul Hidayati Ade & Marvel Maloti, 2024). This stage supports students in making realistic and informed career decisions and enhances their readiness to enter the workforce (Baiti & Munadi, 2014). Career decision-making itself involves selecting educational or occupational pathways based on the integration of self-knowledge, career information, and personal values (Arjanggi, 2017). However, this process is often influenced by both internal factors, such as personality and abilities, and external factors, including family expectations, socio-economic conditions, peer influence, and media exposure (Anggraini et al., 2021; Hadiyati & Astuti, 2023; Risnasari & Basuki, 2020).

Interests and talents play a decisive role in shaping career choices. Interest functions as an intrinsic motivational force that drives individuals toward specific activities, while talent reflects innate potential that can be developed through education and experience (Habsy et al., 2023). Alignment between interests, talents, and career choices has been consistently associated with higher levels of satisfaction, performance, and persistence, whereas misalignment may lead to disengagement, stress, and career failure (Hadiyati & Astuti, 2023). Consequently, effective career guidance should explicitly integrate interest and talent assessment as a core component of career planning interventions.

However, existing studies on digital career guidance applications are predominantly descriptive and focus mainly on usability, user satisfaction, or general effectiveness, without sufficiently grounding application design in established career development theories. Many R&D studies have yet to explicitly operationalize Super's developmental career stages and Holland's vocational typology as a coherent theoretical framework for deriving application features, assessment components, and guidance pathways. Moreover, limitations in prior applications include fragmented career information, limited personalization based on individual interest talent profiles, and insufficient support for systematic career planning processes.

Addressing these gaps, the present study positions Super's and Holland's theories as an integrated theoretical foundation for the development of a digital career guidance application. This study contributes theoretically by translating core constructs of career development and vocational personality theories into functional design elements of a digital application. Practically, it offers a structured, theory driven digital tool that supports students in identifying interests and talents, exploring career alternatives, and formulating realistic career plans. By bridging theoretical perspectives and technological innovation, this study seeks to strengthen the role of digital career guidance in fostering informed, autonomous, and sustainable career decision making among students.

METHOD

This study employed a Research and Development (R&D**)** methodology using the 4D development model **:** Define, Design, Develop, and Disseminate proposed by Thiagarajan, Semmel, and Semmel ((Thiagarajan et al., 1974). The 4D procedure was implemented systematically to produce a digital career information application that meets key product quality criteria, particularly

validity and practicality.

Figure 1. Stages of the 4D Model

The study was conducted at SMAN 7 Pekanbaru from September to November 2025. Participants consisted of three experts (media/design expert, content/material expert, and language expert), three school counselors, and 31 students involved in a small-scale try-out. In addition, a needs analysis survey was administered to 430 respondents to identify the urgency and expected features of digital career information media.

In the Define phase, a needs assessment was conducted to identify students' career-planning problems, limitations of existing career guidance media, and essential features required for the application. This phase involved a literature review, preliminary observations, and discussions with counselors. In the Design phase, the results of the needs assessment were translated into product specifications, including the application framework, interest talent assessment structure, content organization, user navigation flow, and interface storyboard design. In the Develop phase, a prototype was produced and then evaluated through expert review; revisions were made based on validator feedback, followed by a practicality test with counselors and students as end users. The Disseminate phase focused on final product packaging, the preparation of user guidelines, and implementation recommendations to support broader adoption in school-based career guidance services.

Validity indicators (expert judgment)

Product validity was examined through expert validation involving three domains: media/design, content/material, and language. Media/design validity indicators emphasized the quality of the interface and ease of use, including clarity of display, navigational logic, and usability. Content/material validity indicators assessed the relevance and accuracy of career information, alignment with the application's objectives, and adequacy of the presented content for students' career planning needs. Language validity indicators evaluated clarity, readability, and appropriateness of language for the target users to ensure the instructions and information were easily understood.

Practicality indicators (user-based evaluation)

Product practicality was assessed using practicality questionnaires administered to counselors and students. Operationally, the small-scale trial gathered evidence from students regarding practicality and readability, and from counselors regarding content clarity, ease of navigation, and the usefulness of features for supporting career guidance services. Conceptually, practicality was aligned with the usability perspective covering effectiveness, efficiency, and user satisfaction in a specified context of use as emphasized in ISO 9241-11 (*ISO 9241-11*, n.d.). In educational design research, practicality is also recognized as a core quality criterion (alongside validity and effectiveness), indicating that the developed product is feasible and workable in the intended setting (Nieveen, 1999; Plomp & Nieveen, 2013).

Data analysis (formulas and interpretation criteria)

Data were analyzed descriptively by converting the obtained scores into percentages using the following formulas:

$$\text{Validity Level (\%)} = \left(\frac{\text{Total Score Obtained from Experts}}{\textit{Maximum Posible Score}}\right) \times 100\%$$

$$\text{Practicality Level (\%)} = \left(\frac{\text{Total Score Obtained from User}}{\textit{Maximum Posible Score}}\right) \times 100\%$$

Table 1. Interpretation Criteria for Product Validity/Practicality

Percentage	Category
81%–100%	Very Valid/ Very Practical
61%–80%	Valid/ Practical
41%–60%	Fairly Valid/ Fairly Practical
21%–40%	Less Valid/ Less Practical
0%–20%	Not Valid/ Not Practical

(Riduwan, 2018)

RESULT DAN DISCUSSION

Result

Define Stage

In the Define stage, the study identified the core problem, user characteristics, and functional requirements of a digital career guidance application by analyzing needs-assessment questionnaires from both students and school counselors/teachers. Based on the career media needs analysis questionnaire using a 1 to 4 scale, consisting of 21 items and completed by 430 student respondents, the results are presented in Table 2 below.

Table 2. Results of the Career Media Needs Analysis

Number of Respondents	Total Score Obtained	Maximum Total Score	Percentage of Career Media Needs Questionnaire Analysis Results
430	31083	36120	86.05 %

Furthermore, the researcher also presents the results of the student needs survey by indicator in Figure 2 below..

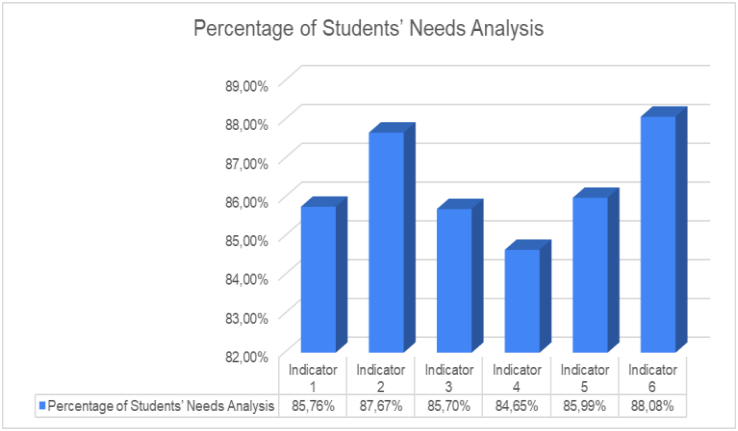

Figure 2. Percentage of Students' Needs Analysis

Based on indicators adapted from the *Interest and Talent Guide* (Hapsari et al., 2022), six main aspects were identified: (1) Interest and Talent Guide, (2) Career and Education Information, (3) Interest and Talent Tests and Recommendations, (4) Counseling and Social Support Services, (5) Application Appearance and Accessibility, and (6) Application Benefits.

The findings revealed that the *Application Benefits* indicator obtained the highest score, reaching 88.08%. This result indicates that students highly expect career applications to provide tangible benefits, such as facilitating access to information, offering recommendations for appropriate educational pathways, motivating future planning, and supporting career-related decision-making

These findings are consistent with previous studies; for instance, Ryan and Deci (Deci & Ryan, 2000), through Self-Determination Theory, emphasized that media supporting autonomy, competence, and social connectedness enhances students' intrinsic motivation and engagement in career

design. Therefore, the design of career information applications should be oriented toward user benefits and personal impact. Overall, this study suggests that career application development needs to prioritize concrete benefits for students by providing comprehensive career information, integrating interest and talent assessment features, equipping counseling support services, and ensuring an accessible and user-friendly interface.

The results of the teacher questionnaire provide an overview of the needs for career information media in schools. In general, teachers assessed that the developed application is relevant to students' needs, particularly in providing comprehensive career information, recommendations for educational pathways aligned with interests and talents, and support in the career decision- making process. These findings are further illustrated in Table 3:

Table 3. Results of the Teachers' Career Media Needs Analysis

Indicator	Total Score Obtained	aximum Total Score	Percentage of Career Media Needs Questionnaire Analysis Results
Career Information in Media	629	840	74,88%
Analisis Analysis of Media Used	609	672	90,63%
Media Features	892	1008	88,49%
Teachers' Role in Utilizing Media	589	672	87,65%
Total	2719	3192	85,18%

The questionnaire analysis showed that the overall level of BK teachers' needs for career media development was categorized as high, with an average percentage of 85.18% of the total maximum score. The highest percentage was found in the *Analysis of Media Used* indicator (90.63%), reflecting teachers' expectations for media that is aligned with students' needs, relevant to labor market developments, and supportive of learning objectives. However, item analysis revealed that career guidance media in schools are still largely dominated by printed materials such as brochures, leaflets, and bulletin boards, indicating that the adoption of digital-based media has not yet been fully optimized. This condition aligns with previous studies reporting that many schools continue to rely on conventional approaches in guidance and counseling services (Prayitno, n.d.)

In addition, the *Media Features* indicator obtained a high score of 88.49%, suggesting that teachers expect career media tobe equipped with relevant features such as interest and talent tests, educational pathway recommendations, and interactive elements that encourage student engagement in career decision-making.

The *Career Information in Media* indicator also scored high (74.88%), emphasizing the need for comprehensive and attractive presentation of career information. Overall, these findings demonstrate that BK teachers require career media that is accessible, functional, and supportive of effective career guidance programs. Consequently, the development of career information applications should focus on delivering relevant content, integrating assessment and recommendation features, and designing user-friendly interfaces that can be easily integrated into school

guidance and counseling services.

Design Stage

In the Design stage, the findings from the needs assessment were translated into concrete product specifications. This stage focused on defining the application framework, structuring the interest–talent assessment, organizing content, mapping the user navigation flow, and preparing an interface storyboard as a basis for prototype development. The design decisions were explicitly aligned with the six needs dimensions adapted from the Interest and Talent Guide: (1) Interest and Talent Guide, (2) Career and Education Information, (3) Interest and Talent Tests and Recommendations, (4) Counseling and Social Support Services, (5) Application Appearance and Accessibility, and (6) Application Benefits.

Based on these dimensions, the product was designed as a web-based career information application that supports students' career planning through a sequence of self-understanding, exploration, and planning activities. The final product design was structured into key modules reflected in the main navigation menu, including Home**,** About Us**,** Contact Us**,** FAQ**,** Program/Major Selection**,** Interest–Talent Test**,** Campus Search**,** Career Planner, and Login and Registration for account access.

This structure was intended to ensure that students can smoothly progress from identifying their personal interests and talents to exploring study options, and ultimately to developing realistic career plans in a guided and step-by-step manner

The user flow was designed to be straightforward and student-friendly. Students begin at the Home page, which provides an overview and quick access to essential functions. After registering/logging in, students complete the Interest Talent Test to obtain an initial personal profile. The design then directs students to exploration features (Program/Major Selection and Campus Search) to compare educational pathways and requirements. Finally, students use the Career Planner module to translate information and test results into actionable plans (e.g., goal-setting and follow-up steps). In contrast, supportive information and help resources are provided via FAQs and the Contact Us communication channels. This flow was developed to respond to the expected benefits of career media, namely easier access to information, more precise recommendations, and more substantial support for decision-making, while keeping navigation logical and efficient.

From an interface perspective, the storyboard emphasized clarity, accessibility, and ease of navigation. The final product uses a side navigation menu with icons and clear labels to reduce cognitive load and help students quickly locate functions. In addition, the home interface provides shortcut access to core features, enabling faster task completion and reinforcing the design's practical orientation. Overall, the Design stage produced a coherent blueprint that integrates students' needs into a structured digital experience and serves as the basis for prototype production and expert validation in the next phase.

Develop Stage

In the Develop stage, the initial design was transformed into a digital product: the SiKarier.com web application, accessible at https://sikarier.com/. The prototype then underwent expert evaluation, followed by

revisions based on validators' feedback, and was subsequently tested through a small-scale practicality trial involving guidance and counseling teachers and students as end users.

a. Expert Validation Results

Based on the validation results from three experts, namely a design expert, a content or material expert, and a language expert, the data are presented in Table 4 below

Table 4. Expert Validation Result

No	Validator	Presentation Validity	Criteria
1	Desain expert	95,56%	Very Valid
2	Material expert	89,33%	Very Valid
3	Language expert	86,7%	Very Valid
Average Validity		**90,5 %**	**Very Valid**

The results of expert validation on the career information application based on students' interests and talents to support career planning indicate that the application falls into the very valid category. In the design aspert, a percentage score of 95.56% was obtained, indicating that the application's interface, navigation, and usability are in accordance with sound instructional design principles and are appealing to users. Meanwhile, in the material aspert, the validation yielded a percentage of 89.33%, which also falls into the very valid category. And, in the language aspect, The validation yielded a percentage of 86.7%. This result demonstrates that the content presented in the application is relevant to students' career planning needs, accurate, and aligned with the application's development objectives.

Based on the results of the expert validation, the developed product can be presented as follows (Figures 1 to 9).

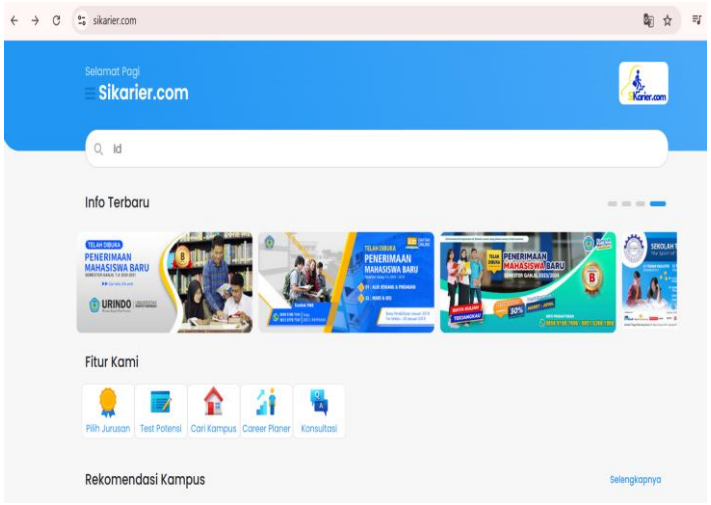

Figure 3. Homepage interface.

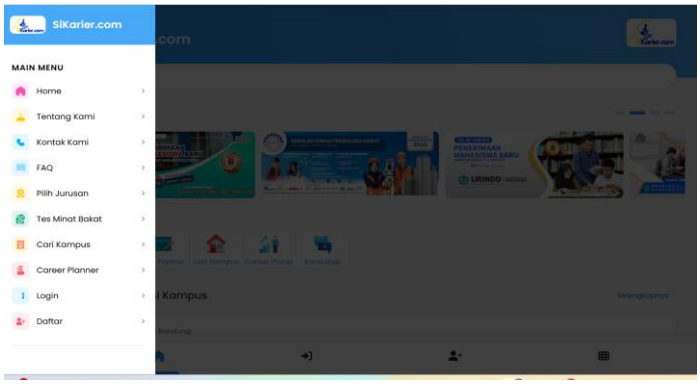

Figure 4. Menu interface.

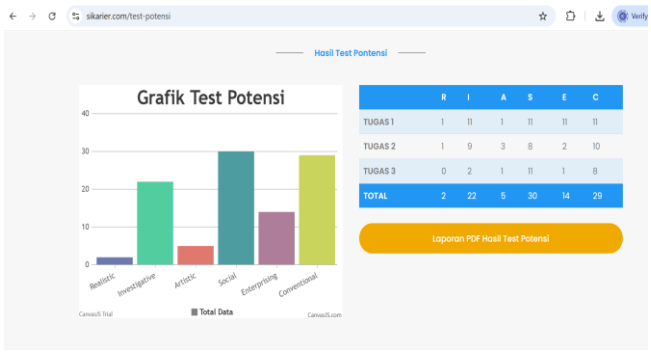

Figure 5. Potential test results

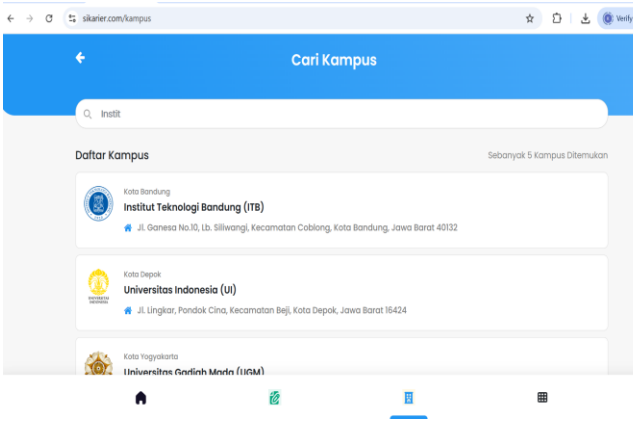

Figure 6. College information

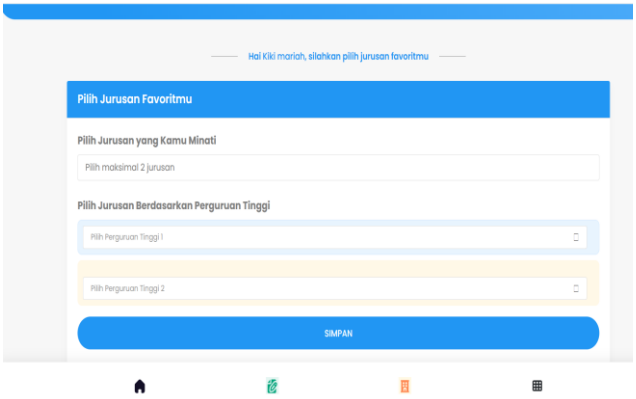

Figure 7. Department selection menu

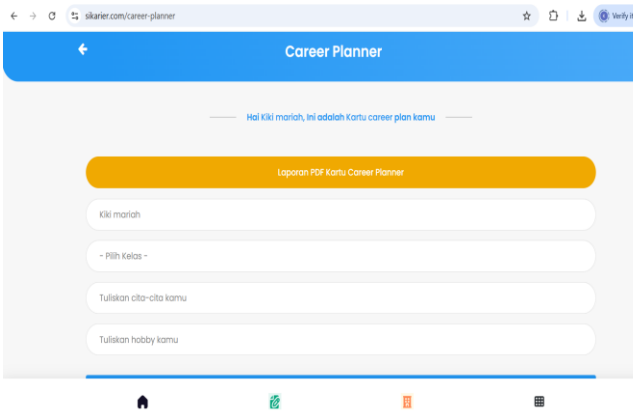

Figure 8. Career planner

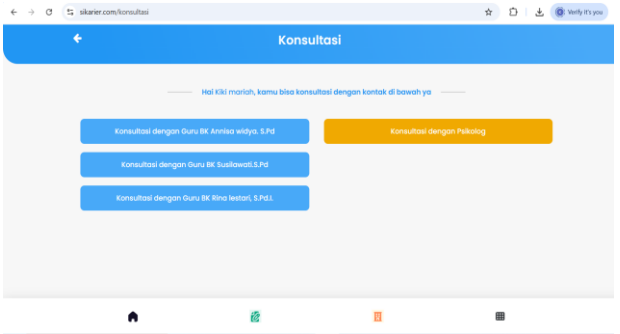

Figure 9. Consultation menu

b. Practicality Test with Guidance and Counseling Teachers and Students

After the expert validation and revision process, the practicality of the developed SiKarier.com application was examined through a small-scale try-out involving guidance and counseling teachers (counselors) and students as end users.

1) Practicality test with guidance and counseling teachers (counselors)

Based on the data obtained from three teacher respondents, the results are presented in Table 5 below.

Table 5. Practical Results with Teacher Respondents

Respondent	Practicality Percentage	Category
Teacher 1	89.06%	Very Practical
Teacher 2	90.63%	Very Practical
Teacher 3	98.44%	Very Practical
Average	92.71%	Very Practical

The practicality test conducted by teachers revealed that the career information application based on students' interests and talents obtained an average score of 92.71%, categorized as very practical. This result indicates that, from the teachers' perspective as professional users in career guidance services, the application demonstrates excellent content clarity, ease of navigation, and feature usefulness.

In terms of content clarity, teachers found the information provided to be relevant, easy to understand, and aligned with students' needs in career exploration. Regarding ease of navigation, the interface and menu structure were considered simple and efficient, allowing teachers to guide students in using the application without significant difficulty. From the perspective of feature usefulness, teachers reported that features such as interest assessment and career recommendations greatly assist them in delivering more targeted and data based career guidance services**.**

2) Practicality test with students

Based on the product trial involving 31 students at SMAN 7 Pekanbaru, the practicality results are presented in Table 6 below

Table 6. Practicality Results from Student Respondents

Respondents	Average Practicality Percentage	Category
31 students	81.23%	Very Practical

The practicality test involving 31 students as respondents revealed that the career information application based on interests and talents achieved an average practicality score of 81.23%, categorized as very practical. This indicates that the application is easy to use, has a clear interface, and provides features that can be operated smoothly by users without significant difficulties. In terms of readability, students reported that the information and instructions presented in the application are easy to understand and engaging, making it suitable for use in career planning activities. Therefore, the application is considered practical and feasible to be used by students in career guidance sessions at schools.

Overall, these findings suggest that the application demonstrates a high level of practicality not only for students but also for teachers as facilitators of career guidance in schools.

While outcome effectiveness was not tested in this study, the student practicality score of 81.23% (Very Practical) and strong ratings on ease of use and usefulness indicate that SiKarier.com is feasible and acceptable for students, and therefore capable of facilitating structured career planning activities in school guidance services.

Discussion

The expert validation results indicated that the Career Information Application based on interests and talents met the validity criteria, meaning it was deemed appropriate in terms of content, design, and usability. The expert validation results show that the career information application based on students' interests and talents is in the *very valid* category. In the design aspect, the score of 95.56% proves that the application is easy to use, visually clear, and comfortable for students to navigate. This means the design has met good usability principles, simple, attractive, and user-friendly. This statement is align with counselors and students statements that on the limited trials showed that both counselors and students were able to use the application easily.

In the material aspect, the validation score of 89.33% also falls into the *very valid* category, showing that the content fits students needs in planning their careers. The materials presented in the application help students understand their interests and talents better, which is essential in making appropriate career decisions. This is in line with Super's theory, which explains that career choices develop from one's self-concept and personal experiences.

This finding suggests that the developed content aligns with the fundamental principles of career guidance, particularly in helping students recognize their potential and understand the connection between interests, talents, and career choices. In line with this, career consultation software can facilitate students' individual development through services that support career planning based on academic majors, interests, talents, knowledge, personality, competencies, and other supporting factors(Krismona et al., 2021). Furthermore, such applications help address the limitations of

conventional career counseling resources, which are often inadequate within educational institutions (Herath et al., 2024). These findings are consistent with Holland's theory, emphasizing that understanding one's interests and talents forms a critical foundation for effective career decision-making.

The interactive interface and clear instructions enabled students to conduct self-assessments, review their interest and talent results, and receive personalized career recommendations. The application also proved useful in identifying students' interests and talents in a practical way, responding to their need for effective information services in career planning (Putri et al., 2023)This is consistent with Haryanto et al. (Haryanto et al., 2020) who found that digital media enhances the efficiency of counseling services, particularly in data-based career assessments. The practicality of this system positions the application as an innovative support tool for career information and planning services. Additionally, the accessibility of the application aligns with the growing need for counselors to integrate technology in guiding students toward academic majors that match their potential (Darmawan & Dwikurnaningsih, 2021).

The implementation of digital applications for career assessment and information offers an innovative solution to the challenges students face, given that access to comprehensive and up-to-date career information is a key factor in career development (Haryanto et al., 2020). Students require consistent support in making career decisions either directly from counselors or indirectly through relevant digital career platforms. By utilizing digital technology, counselors can assist students in identifying their potential, interests, and talents more efficiently and engagingly. Many of these applications integrate psychological assessments such as multiple intelligences, RIASEC, and personality types to provide academic or career recommendations that align with students' profiles. This supports counselors in offering more targeted and data-informed guidance (Julius et al., 2022). Web based career guidance applications also enable adaptation to technological changes, expanding access to guidance services for a broader range of students (Atay et al., 2024)

Career applications enable a more personalized, practical, and accessible approach to career assessment and information delivery, tailored to each student's characteristics. Compared to conventional methods, digital innovations offer numerous advantages, including ease of access, interactivity, accurate data presentation, and visually engaging displays. Furthermore, the interactive features of these applications allow students to independently explore both their self-potential and the world of work, thereby improving career maturity and preparing them for future professional challenges (Elisabet Septia Atma et al., 2024)The use of digital technology also helps reduce students' career anxiety, which continues to grow alongside the increasing complexity of the job market and the changing patterns of life influenced by technological advancement (Nurdin et al., 2026)

The Career Information Application based on Interests and Talents serves not only as an assessment tool for school counselors but also as a digital innovation that expands the function of career counseling services within schools. Counselors can use the assessment results to provide follow-up services such as individual or group counseling. Based on these findings, it can be concluded that technology functions not merely as an auxiliary tool but as a partner that facilitates adaptive, interactive, and data-driven career decision making in the era of Industry 4.0. Thus, the integration of digital technology represents a strategic step in improving the quality of guidance and counseling services while helping students plan their careers more effectively and meaningfully in today's digital age.

The implementation of digital applications for career assessment and information provides an innovative solution to these challenges, as access to comprehensive and up-to-date career information is a dominant factor in students' career development (Haryanto et al., 2020). Students need consistent support in making career decisions, whether directly through guidance counselors or indirectly through relevant digital career applications. Through digital tools, counselors can help students identify their potential, interests, and talents more efficiently and engagingly.

Career applications make it possible to conduct assessments and deliver career information in a more personalized, practical, and accessible manner, tailored to each student's characteristics. Compared to conventional methods, digital innovation offers

several advantages, including easy accessibility, interactivity, accurate data presentation, and visually engaging content. Moreover, the interactive features of these applications allow students to independently explore both their self-potential and the world of work, enhancing career maturity and preparing them to meet future professional demands (Elisabet Septia Atma et al., 2024). Therefore, leveraging digital technology represents a strategic step toward improving the quality of guidance and counseling services while helping students plan their careers more effectively and meaningfully in the modern era.

The novelty of SiKarier.com lies in its integration of interest talent profiling, personalized exploration, and action-oriented career planning within a single web-based workflow designed specifically for school career guidance. Rather than functioning as a static repository of general career information, the application guides students through a structured sequence from self understanding (interest–talent test), to career exploration (major and campus information), and finally to career planning through the career planner module. This integrated and process-based design contributes a data informed digital career guidance model that is more aligned with the counseling workflow in schools. The feasibility of this contribution is supported by the practicality findings, where teachers rated the application 92.71% (Very Practical) and students rated it 81.23% (Very Practical), indicating strong acceptability for early implementation.

The findings also provide theoretical implications for digital career guidance by demonstrating how established career theories can be operationalized into functional design elements. The interest talent profiling and recommendation mechanism reflects Holland's person–environment fit perspective, which emphasizes matching vocational interests with educational and occupational environments (Holland, 1997).The stepwise pathway from assessment to exploration and planning corresponds to Super's developmental view of career planning, where structured tasks support students in building career maturity and decision readiness (Super, 1980). In addition, students' high practicality ratings on usability and perceived usefulness can be interpreted through Self Determination Theory, as the system potentially supports autonomy (self guided exploration), competence (clear guidance and planning steps), and relatedness (help and communication channels), which are central to sustained engagement in learning and decision processes (Deci & Ryan, 2000). Together, these points suggest that effective digital career guidance is strengthened when theory constructs are embedded as user workflows and decision supports**,** not merely presented as information.

Practically, the high teacher practicality score indicates that counselors perceive the application as usable and beneficial for delivering more targeted and data based career guidance services, while the student practicality score indicates that students can operate the system with minimal difficulty and perceive it as helpful for exploration and planning activities t the same time, student indicator results that remain in the "Practical" range for functionality/reliability and privacy/trust highlight priorities for refinement before broader deployment, particularly strengthening technical robustness and improving privacy communication to increase user confidence.

Therefore, SiKarier.com is recommended for early implementation in school based career guidance sessions as a structured tool to facilitate students' career planning activities, while outcome effectiveness should be examined in future field trials using validated career planning measures.

CONCLUSION

This research and development study produced a digital product in the form of an interest and talent based career information web application, SiKarier.com, designed to support school based career guidance services. The evaluation results indicate that the developed product meets the primary quality criteria at the development stage, namely validity and practicality. Expert validation by three experts yielded an overall average score of 90.5%**,** categorized as Very Valid, indicating that the design, content, and language aspects are appropriate for the intended users. A small scale practicality test also showed that the application was Very Practical, as reported by guidance and counseling teachers with an average score of 92.71% and by students with an average score of 81.23%. These findings confirm that the application is feasible, easy to use, and acceptable for initial implementation in school career guidance contexts.

However, this study did not examine outcome effectiveness in terms of measurable improvement in students' career planning competence using a pretest

and posttest design, comparison groups, or longitudinal tracking. Therefore, effectiveness claims in this study are limited to initial effectiveness in use (implementation readiness). Future research should conduct wider field trials or quasi experimental studies using validated career planning outcome measures and supported by application usage analytics to provide stronger evidence of the application's impact on improving students' career planning competence.

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