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DEVELOPMENT OF THE RIASEC 4.0 INSTRUMENT APPLICATION IN EXPLORING THE POTENTIAL, INTERESTS, AND TALENTS OF STUDENTS AT SMAN 12 LUWU TIMUR

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Abstract
This study aims to develop the RIASEC 4.0 instrument application for exploring the potential, interests, and talents of 11th-grade students at SMAN 12 Luwu Timur. Using a Research and Development (R&D) approach based on the Borg & Gall model, this research employs both quantitative and qualitative methods. The subjects of the study include two Counseling and Guidance experts for content validation, two Educational Technology experts for technical assessment, and students involved in three stages: initial needs assessment, validity and reliability testing of the instrument, and practicality testing of the application. Data were collected through questionnaires, expert validation sheets, observations, and interviews, and then analyzed using Pearson correlation analysis and Cronbach's Alpha reliability. The results indicate a high demand from students for the RIASEC 4.0 application as an assessment tool for potential and interests. The application was developed with an attractive user interface design that aligns with user characteristics and achieved an average validity score of 90%. Practicality evaluations from students and guidance counselors showed average scores of 4.75 (95%) and 4.60 (92%), indicating that the application is very easy to use and effective in supporting career guidance. This research is expected to contribute to the development of technology-based career assessment instruments in schools.
Keywords: RIASEC 4.0 Instrument Application, Potential, Interests, Talents, Career Guidance

Abstrak
Penelitian ini bertujuan untuk mengembangkan aplikasi instrumen RIASEC 4.0 dalam menggali potensi, minat, dan bakat siswa kelas XI di SMAN 12 Luwu Timur. Dengan menggunakan pendekatan Research and Development (R&D) model Borg & Gall, penelitian ini melibatkan metode kuantitatif dan kualitatif. Subjek penelitian terdiri dari dua ahli Bimbingan dan Konseling untuk validasi konten, dua ahli Teknologi Pendidikan untuk penilaian aspek teknis, serta siswa yang terlibat dalam tiga tahap: asesmen kebutuhan awal, uji validitas dan reliabilitas instrumen, serta uji kepraktisan aplikasi. Data dikumpulkan melalui angket, lembar validasi ahli, observasi, dan wawancara, kemudian dianalisis menggunakan analisis korelasi Pearson dan reliabilitas Cronbach's Alpha. Hasil penelitian menunjukkan bahwa terdapat kebutuhan tinggi dari siswa terhadap aplikasi RIASEC 4.0 sebagai alat asesmen potensi dan minat. Aplikasi ini dikembangkan dengan desain antarmuka yang menarik dan sesuai dengan karakteristik

pengguna, serta memperoleh skor validitas rata-rata 90%. Evaluasi kepraktisan dari siswa dan guru BK menunjukkan skor rata-rata 4,75 (95%) dan 4,60 (92%), yang mengindikasikan aplikasi ini sangat mudah digunakan dan efektif dalam mendukung bimbingan karier. Penelitian ini diharapkan dapat memberikan kontribusi dalam pengembangan instrumen asesmen karier berbasis teknologi di sekolah.
***Kata kunci**: Aplikasi Instrumen RIASEC 4.0, Potensi, Minat, Bakat, Bimbingan Karier*

INTRODUCTION

In this era of globalization and rapid technological development, understanding students' potential, interests, and talents has become increasingly important in the context of education. Teenagers often face difficulties in recognizing and determining career paths that suit their talents and interests. This is exacerbated by a lack of adequate information about further study options after graduating from high school, which can hinder their ability to make the right educational decisions (Manippi et al., 2024). Therefore, support from parents and teachers is essential to help students plan their careers so that they can understand their talents and align their interests with potential career fields (Rambe et al., 2024). The RIASEC theory developed by John Holland offers an effective framework for identifying individual personality types and career tendencies. This theory classifies personalities into six main types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. Each type reflects a person's preferences for certain activities and work environments, which can help students determine career paths that match their potential and interests (Holland, 1997). However, even though this theory has been widely applied, there are still challenges in its implementation, especially in the context of education in Indonesia. One of the main challenges faced by Guidance and Counseling (BK) teachers is the lack of practical instruments that can be used to effectively analyze students' potential, interests, and talents.

Many Guidance and Counseling (BK) teachers in secondary schools still face various obstacles in assessing students, even though assessment instruments are actually available and easily accessible. These difficulties are generally related to time constraints and a lack of technical skills in processing assessment results quickly and accurately using computers or digital applications (Andriani & Oktasari, 2022). This situation often causes the assessment process to not run optimally, and even has the potential to hinder guidance and counseling teachers in providing appropriate services to students. On the other hand, the development of student needs in the 21st century demands the presence of more modern, efficient, and technology-based guidance and counseling services. This condition emphasizes the importance of developing digital assessment instruments that are able to meet the needs of guidance and counseling teachers while providing broader benefits to students.

One of the most widely used career assessment approaches in the context of education is the RIASEC theory developed by John L. Holland. This theory emphasizes that a person's career interests can be categorized into six personality types, namely Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. RIASEC has proven to be

effective in helping students understand their interest tendencies and guide them towards suitable career choices. However, in practice, many RIASEC instruments are available in manual or printed form, making it difficult for guidance counselors to process data quickly, especially when there are a large number of students to assess. The development of digital-based instruments is a necessity because it can increase the speed of data processing, the accuracy of results, and provide a more interactive user experience for students.

Based on these issues, the development of a digital-based application that integrates the RIASEC theory is a relevant and innovative solution for schools. This application can not only help students recognize their potential, interests, and talents more accurately, but it can also ease the workload of guidance counselors in conducting assessments and career mapping. In the context of this study, an application called RIASEC 4.0 was developed, which is a digital-based career interest assessment instrument designed specifically for use by 11th grade students at SMAN 12 Luwu Timur. This application is expected to be an effective tool in the process of self-exploration, particularly in relation to students' academic potential and career interests.

This research uses a Research and Development (R&D) approach based on the Borg & Gall model. The Borg & Gall model is known as a systematic, comprehensive, and continuous product testing and refinement-oriented approach to educational product development. Through this model, the research was conducted in several stages, starting from needs analysis, planning, initial product development, limited testing, product revision, to wider testing. Each stage made an important contribution in ensuring that the RIASEC 4.0 application was truly in line with the needs of guidance counselors and students and was suitable for practical use in a school environment.

The first stage of this research was needs analysis. At this stage, researchers conducted observations and interviews with guidance counselors and 11th grade students at SMAN 12 Luwu Timur to determine their needs for digital-based career assessment instruments. The results of the analysis showed that most guidance counselors needed an instrument that was easy to use, capable of processing data automatically, and had an attractive appearance for students. Students also expressed that they were more interested in using digital applications than printed assessment instruments, because the use of applications was considered more interactive, flexible, and easy to understand. These findings became the basis for the researchers in designing the initial features and appearance of the application.

The next stage was the development of the RIASEC 4.0 application prototype. This prototype included the user interface design, user flow, and instrument items that had been adapted to the RIASEC theory. The application was designed so that students could access it via smartphones or computers, with a simple but functional display. In addition, the assessment results can be automatically displayed in the form of easy-to-understand graphs or descriptions, so that students can immediately identify their career interests. For

guidance counselors, this application provides a feature that summarizes the assessment results of all students, thereby facilitating the process of mapping interests, preparing guidance programs, and providing follow-up services.

After the prototype was completed, the next step was to conduct validity and practicality tests. The validity test was conducted with the involvement of experts in both educational technology and career counseling. The experts assessed the suitability of the instrument's content, the clarity of the items, the accuracy of the application's functions, and its integration with the RIASEC theory. The results of this validation were then used to make improvements to the application prototype. After revisions based on expert input, the application proceeded to the practicality test stage involving 11th grade students as the main users. This test aimed to determine whether the application was easy to use, ran smoothly, and provided a satisfying user experience. In addition, guidance counselors were also asked for their opinions on how this application could help them in the career assessment process.

Data obtained from the practicality test showed that students felt that this application helped them to recognize themselves better, understand their interests, and see the connection between RIASEC personality types and future career choices. Meanwhile, guidance counselors felt greatly assisted because the application was able to process the assessment results automatically and present comprehensive reports. Time efficiency was one of the most significant impacts of using this application, as teachers no longer needed to perform time-consuming manual calculations. In addition, this application could store data more neatly and securely, facilitating the process of monitoring student development over time.

Through a series of stages in the Borg & Gall model, this research not only produced a digital-based career assessment application but also contributed theoretically and practically to the development of guidance counseling services in schools. From a theoretical perspective, this research shows that the RIASEC concept can be effectively integrated into a digital platform without reducing its validity. From a practical perspective, the RIASEC 4.0 application can be an innovation in conducting efficient career assessments in line with current developments in educational technology.

It is hoped that the results of this study will not only be useful for SMAN 12 Luwu Timur, but can also be applied in other schools facing similar problems. With the growing need for digital-based guidance counseling services, applications such as RIASEC 4.0 can encourage the transformation of career assessment towards a more modern, data-driven system that is oriented towards the needs of students. In addition, this research also opens up opportunities for the development of advanced features, such as AI-based career recommendations, integration with college or workplace databases, and increased accessibility for students with special needs. Thus, the RIASEC 4.0 application is expected to be a starting point for the development of more innovative and sustainable career assessment instruments in the future.

METHOD

This study uses a Research and Development (R&D) approach with the Borg & Gall model, which aims to develop the RIASEC 4.0 instrument application in exploring the potential, interests, and talents of 11th grade students at SMAN 12 Luwu Timur. This study combines quantitative and qualitative approaches, where the quantitative approach is used to measure the level of validity and practicality of the application, while the qualitative approach is used to understand the experiences and perceptions of students and experts involved in validating the application. The research was conducted in the 2024/2025 academic year at SMAN 12 Luwu Timur, with the application development and validation process by experts carried out over a period of four months.

The research subjects consisted of two Guidance and Counseling experts for content validation, two Educational Technology experts for assessing the technical aspects and design of the application, as well as students involved in three stages: initial needs assessment, instrument validity and reliability testing, and application practicality testing. The operational definitions in this study include potential as the innate abilities of students that have not been fully realized, interests as the specific attractions of students to certain activities, and talents as innate special abilities that can be developed through practice. The RIASEC theory was used to classify students' personality types into six categories, which helped them identify suitable career paths.

Information was collected through field surveys and literature reviews to identify the need for assessment tools. Next, planning was carried out by developing RIASEC 4.0 instrument statement items and determining the main features of the application. Initial product development involved creating prototypes of the instrument and application, which were then tested for validity by guidance and counseling experts and media experts. After revisions based on the validity test results, field trials were conducted involving guidance counselors and students to evaluate the practicality of the application. Data collection techniques included questionnaires to identify needs, expert validation sheets to assess content validity, observations to monitor student interactions, and interviews to obtain feedback. The collected data were analyzed quantitatively using Pearson's correlation analysis and Cronbach's Alpha reliability, and qualitatively using content analysis methods to identify themes and patterns from the feedback provided. By following this systematic research method, it is hoped that the RIASEC 4.0 instrument application can be developed properly and provide significant benefits in the career guidance process in schools.

RESULTS AND DISCUSSION

The results of this study indicate that the development of the RIASEC 4.0 instrument application successfully meets the needs of students and Guidance and Counseling (BK) teachers in exploring the potential, interests, and talents of 11th grade students at SMAN 12 Luwu Timur. Based on the analysis of the collected data, there are several key findings. First, the initial needs assessment results show that students have a high need for the

RIASEC 4.0 application as a tool for assessing potential and interests, with an average score for the instrument development needs aspect reaching 91.53%. This shows that students realize the importance of tools that can help them identify their interests and talents more accurately.

The RIASEC 4.0 application was developed with an attractive interface design that suits the characteristics of its users, as evidenced by an average validity score of 90% from expert validation. This high level of validity indicates that the application is highly valid and reliable in supporting the career guidance process, reflecting that the application has been carefully designed and is in line with the underlying theory. Furthermore, the practicality evaluation by students and guidance counselors showed very positive results, with an average score of 4.75 (95%) from students and 4.60 (92%) from guidance counselors, indicating that the RIASEC 4.0 application is very easy to use and effective in helping students recognize their potential.

Students also reported a positive user experience, saying that they found the career recommendation feature provided by the application helpful. Most students appreciated the ease of navigation and clarity of instructions in the application, although there were some suggestions for simplifying the assessment questions and improving the interface to make it more attractive. Finally, this application not only provides assessment results but also presents career recommendations that match students' interests and talents, helping them plan their future education and career steps. Overall, these findings show that the RIASEC 4.0 application can be an effective tool in supporting career guidance in schools, helping students recognize their potential, interests, and talents, and providing relevant recommendations for future career development. This research is expected to contribute to the development of more effective and relevant technology-based career assessment instruments in educational settings.

DISCUSSION

This study successfully developed the RIASEC 4.0 instrument application as a tool to explore the potential, interests, and talents of 11th grade students at SMAN 12 Luwu Timur. The results showed that this application meets the needs of students and Guidance and Counseling (BK) teachers in the career guidance process. With an average score of 91.53% for the need to develop the instrument, it is clear that students feel the urgency for an assessment tool that can help them identify their interests and talents more accurately. This is in line with previous findings which show that good self-understanding is very important in career decision-making (Manippi et al., 2024).

The attractive design of the application, which is tailored to user characteristics, is also a factor in its success. Validation by experts showed an average score of 90%, indicating that the application's content has been adapted to the RIASEC theory and is relevant to students' needs. This high validity reinforces the position of Holland's theory as an effective method for identifying individual personality types and career tendencies (Holland, 1997). In addition, this application also shows an excellent level of practicality,

with an average score of 4.75 (95%) from students and 4.60 (92%) from guidance counselors, indicating that this application is very easy to use and effective in supporting the career guidance process.

Feedback from students shows that they find the career recommendation feature provided by the application helpful. Most students appreciate the ease of navigation and clarity of instructions, although there are some suggestions for simplifying the assessment questions and improving the interface to make it more attractive. This shows that even though the application has been well designed, there is still room for improvement to optimize the user experience. The career recommendations provided by the application are not only based on assessment results, but also take into account current industry and job market developments. This is very important given the rapid changes in the world of work that require students to have a good understanding of existing career opportunities.

This study also highlights the importance of utilizing technology in career guidance in Indonesia, where digital applications can improve the efficiency and quality of career guidance services (Sari et al., 2022). However, this study also has limitations, particularly in terms of the scope of the trial, which was limited to one school. This limits the generalization of the results, as student characteristics, school culture, and available resources may differ between schools. Therefore, trials in various schools with different backgrounds are necessary to ensure that the RIASEC 4.0 application can be widely and effectively implemented. In addition, challenges in developing this application also include the need to continuously update content and career recommendations to remain relevant to changes in the world of work. Overall, the RIASEC 4.0 instrument application shows great potential in supporting career guidance in schools, helping students recognize their potential, interests, and talents, and providing relevant recommendations for future career development. This research is expected to serve as a foundation for the development of more effective and relevant technology-based career assessment instruments in educational settings.

CONCLUSION

Based on the results of research on the development of the RIASEC 4.0 instrument application in exploring the potential, interests, and talents of 11th grade students at SMAN 12 Luwu Timur, several important conclusions can be drawn. This application was developed in response to the high demand from students and Guidance and Counseling (BK) teachers for an effective assessment tool, with an average score for the need to develop the instrument reaching 91.53%. This shows that students recognize the importance of tools that can help them identify their interests and talents more accurately. The RIASEC 4.0 application has an attractive interface design that suits the characteristics of its users, as evidenced by an average validity score of 90% from expert validation.

This high level of validity indicates that the application is highly valid and reliable in supporting the career guidance process. The practicality evaluation by students and guidance counselors showed very positive results, with an average score of 4.75 (95%)

from students and 4.60 (92%) from guidance counselors, indicating that the application is very easy to use and effective in helping students recognize their potential. This application greatly helps them in planning their future education and career steps. Although there are some suggestions for simplifying the assessment questions and improving the interface display, overall, this application provides a positive user experience and supports students' career development. This study concludes that the RIASEC 4.0 instrument application can be an effective tool in supporting career guidance in schools, helping students recognize their potential, interests, and talents, and providing relevant recommendations for future career development. This study is expected to contribute to the development of more effective and relevant technology-based career assessment instruments in the educational environment.

REFERENCES

Adlya, S. I., & Zola, N. (2022). Holland's theory to guiding individual career choices. Jurnal Neo Konseling, 4(4), 30-35. https://doi.org/10.24036/00698kons2022

Ambiel, R. A. M., Hauck-Filho, N., Barros, L. D. O., Martins, G. H., Abrahams, L., & De Fruyt, F. (2018). 18REST: A short RIASEC-interest measure for large-scale educational and vocational assessment. Psicologia, Reflexão e Crítica: Revista Semestral do Departamento de Psicologia da UFRGS, 31. https://doi.org/10.1186/s41155-018-0086-z

Andriani, R., & Oktasari, M. (2021). Pelatihan penggunaan aplikasi alat ungkap masalah (AUM) PTSDL SERI SLTP untuk pemetaan masalah belajar siswa. Connection: Jurnal Pengabdian Kepada Masyarakat, 1(2), 36-41. https://doi.org/10.32505/connection.v1i2.3229

Anggraini, I. A., Utami, W. D., & Rahma, S. B. (2020). Mengidentifikasi minat bakat siswa sejak usia dini di SD Adiwiyata. Islamika, 2(1), 161-169.

Bullock-Yowell, E., & Reardon, R. (2021). Using the self-directed search in the career construction interview. International Journal for Educational and Vocational Guidance, 22(2), 157-168. https://doi.org/10.1007/S10775-021-09478-Z

Choi, Y. (2022). The effect of the career identity of unemployed young people on employment behavior. Journal of the Korea Academia-Industrial Cooperation Society, 23(12), 134-140. https://doi.org/10.5762/kais.2022.23.12.134

Diana, D., Guntur, I., Roebianto, A., & Christy, C. (2023). Choosing the wrong major: What is the profile of students who feel they have chosen the wrong major? Jurnal Psikologi Pendidikan dan Konseling, 9(2), 77-85. https://doi.org/10.26858/jppk.v9i2.45753

Farhan, F., & Biran, M. (2022). Perspektif teori Holland dalam pemilihan karir siswa SMA di era teknologi informasi. Jurnal EDUCATIO: Jurnal Pendidikan Indonesia, 8(1), 9-13. https://doi.org/10.29210/1202221148

Harefa, M., Lase, N. K., & Zega, N. A. (2022). Deskripsi minat dan motivasi belajar siswa pada pembelajaran biologi. Educativo: Jurnal Pendidikan, 1(2), 381-389.

Holland, J. L. (1997). Making vocational choices: A theory of vocational personalities and work environments (3rd ed.). Psychological Assessment Resources.

Lena, I. M., Anggraini, I. A., Utami, W. D., & Rahma, S. B. (2020). Analisis minat dan bakat peserta didik terhadap pembelajaran. Terampil: Jurnal Pendidikan dan Pembelajaran Dasar, 7(1), 23-28.

Nauta, M. M. (2010). The development, evolution, and status of Holland's theory of vocational personalities: Reflections and future directions. Journal of Counseling Psychology, 57*(1), 11-22.

Putri, R. D., & Sari, S. P. (2018). Implementation of John Holland's Career Theory in Guidance and Counseling. ENLIGHTEN: Jurnal Bimbingan Konseling Islam, 1(2), 126-132. https://doi.org/10.32505/ENLIGHTEN.V1I2.768

Rahman, M. F., Alamsyah, M. N., & Firdaus, H. (2024). Implementation of the RIASEC model career guidance guide through career information services for junior high school students. Bulletin of Social Studies and Community Development, 3(1), 55–64. https://doi.org/10.61436/bsscd.v3i1.85

Sari, E., Awal, R., Martalasari, & Sudarmin. (2024). Validity and practicality of ethnovlog media on the production of typical Riau smoked fish (salai) as a science learning media. Biosfer: Jurnal Pendidikan Biologi, 17(1), 233–242. https://doi.org/10.21009/biosferjpb.32089

Thamrin, T., Giatman, G., & Syah, N. (2023). Reliability and validity of RIASEC Holland's on predicting career success for vocational students, Pengajaran Dan Pembelajaran, 9(3), 740–749. https://doi.org/10.33394/jk.v9i3.8704

Wistarin, N. N. I. P., & Syarifah, D. (2023). Holland’s RIASEC model: Asesmen pengembangan karier dan kerja pada pegawai PT Y. Bisma: Jurnal Manajemen, 9(3), 300-309. https://doi.org/10.23887/bjm.v9i3.61603