http://dx.doi.org/10.18623/rvd.v23.n1.4274

DEVELOPMENT OF AN INNOVATIVE MICROSITE-BASED CAREER GUIDANCE AND COUNSELING MANAGEMENT MODEL

DESENVOLVIMENTO DE UM MODELO INOVADOR DE GESTÃO DE ORIENTAÇÃO PROFISSIONAL E ACONSELHAMENTO BASEADO EM MICROSITES

Article received on: 8/29/2025
Article accepted on: 11/28/2025

Rosihan Anwar*
*Halu Oleo University, Kendari, South East Sulawesi, Indonesia
Orcid: https://orcid.org/0009-0003-8662-3099
rosihan0482@gmail.com

Anwar*
*Halu Oleo University, South East Sulawesi, Indonesia
anwarhapide61@gmail.com

Sitti Rahmaniar Abubakar*
*Halu Oleo University, Kendari, South East Sulawesi, Indonesia
rahmaniarabu@gmail.com

Hasmina Tari Mokui*
*Halu Oleo University, Kendari, South East Sulawesi, Indonesia
Orcid: https://orcid.org/0000-0002-3162-2318
hasmina.mokui@uho.ac.id

The authors declare that there is no conflict of interest

Abstract
This research aims to develop a microsite-based career guidance service model to enhance the effectiveness of guidance and counseling services in high schools in Kendari City. The research method adapts the Research and Development (R&D) model by Borg & Gall, with stages including needs analysis, product design, field trials, revisions, and dissemination. The findings indicate that guidance and counseling services in Kendari City still face challenges such as low student participation, limited access, unengaging methods, and minimal use of technology. The development of the microsite was conducted to accommodate the needs of guidance and counseling services, particularly career guidance, featuring information services, online consultation, and discussion forums. Effectiveness testing using N-Gain showed an improvement of 76.10%, categorized as effective, with feasibility scores from design experts (4.4), material experts (4.4), and practitioners (4.5), all falling into the "very good" category. Responses from guidance and counseling teachers (86.20%) and students (82.12%) demonstrated the practicality of the model, also categorized as "very good."

Resumo
Esta pesquisa visa desenvolver um modelo de serviço de orientação profissional baseado em microsite para aprimorar a eficácia dos serviços de orientação e aconselhamento em escolas de ensino médio na cidade de Kendari. O método de pesquisa adapta o modelo de Pesquisa e Desenvolvimento (P&D) de Borg & Gall, com etapas que incluem análise de necessidades, design do produto, testes de campo, revisões e disseminação. Os resultados indicam que os serviços de orientação e aconselhamento na cidade de Kendari ainda enfrentam desafios como baixa participação dos alunos, acesso limitado, métodos pouco envolventes e uso mínimo de tecnologia. O desenvolvimento do microsite foi realizado para atender às necessidades dos serviços de orientação e aconselhamento, particularmente a orientação profissional, apresentando serviços de informação, consulta online e fóruns de discussão. O teste de eficácia usando o N-Gain mostrou uma melhoria de 76,10%, categorizada como eficaz, com pontuações de viabilidade de especialistas em design (4,4), especialistas em materiais (4,4) e profissionais da área (4,5), todas classificadas na categoria "muito bom".

Statistical tests using SPSS indicated that the variance between the experimental and control groups was homogeneous across all schools (p-value > 0.05 in Levene's Equality of Variance test), proving a significant difference between the experimental and control groups in career guidance services using the microsite. This model is expected to serve as an innovative solution to improve the accessibility and quality of guidance and counseling services in the digital era. Future research is suggested to evaluate the long-term impact of microsite usage on students' psychological well-being, academic achievement, and career decision-making, including how Artificial Intelligence (AI) can facilitate guidance and counseling services.

Keywords: Guidance and Counseling. Microsite. Career. Management.

As respostas dos professores de orientação e aconselhamento (86,20%) e dos alunos (82,12%) demonstraram a praticidade do modelo, também categorizada como "muito boa". Os testes estatísticos utilizando o SPSS indicaram que a variância entre os grupos experimental e de controle foi homogênea em todas as escolas (valor p > 0,05 no teste de igualdade de variância de Levene), comprovando uma diferença significativa entre os grupos experimental e de controle nos serviços de orientação profissional que utilizam o microsite. Espera-se que este modelo sirva como uma solução inovadora para melhorar a acessibilidade e a qualidade dos serviços de orientação e aconselhamento na era digital. Sugere-se que pesquisas futuras avaliem o impacto a longo prazo do uso do microsite no bem-estar psicológico dos alunos, no desempenho acadêmico e na tomada de decisões de carreira, incluindo como a Inteligência Artificial (IA) pode facilitar os serviços de orientação e aconselhamento.

Palavras-chave: *Orientação e Aconselhamento. Microsite. Carreira. Gestão.*

1 INTRODUCTION

Education plays a strategic role in the development of human resources, including through guidance and counseling services in schools. These services not only support academic achievement but also help shape a healthy and holistic personality in students. According to Law No. 20 of 2003 on the National Education System, education aims to develop the spiritual, social, emotional, and intellectual potential of learners. However, the reality shows that the implementation of guidance and counseling has yet to reach its optimal level, both in terms of management and technological integration. Research by Yuan (2017) and Savitz-Romer et al., (2021) found that many school counselors failed to report the management process of services, from preparation to follow-up. This poses a significant challenge in achieving national educational goals.

Effective management of guidance and counseling services encompasses planning, organizing, implementation, and evaluation. Nuryanto et al., (2024) emphasized that school counselors must possess professional competence in managing services to achieve professionalism (Wingfield et al., 2010). However, this ideal is often unattained due to technical and administrative constraints. Larran & and Hein (2024)

stated that guidance and counseling programs will not succeed without a clear, systematic, and well-directed management system. Crandall et al., (2020) revealed that conventional service management still dominates, while the integration of digital technology remains minimally explored. Moreover, the ratio of guidance and counseling teachers to students does not meet the standards set by the Ministry of Education and Culture Regulation No. 111 of 2014, which stipulates that one guidance and counseling teacher should serve 150 students, leading to an imbalance in fulfilling student needs. The majority of guidance and counseling teachers still rely on manual systems, resulting in documents often being lost or poorly organized. (Cage et al., 2021) emphasized that this imbalance negatively impacts the effectiveness of services received by students.

The advancement of information technology provides significant opportunities to enhance the efficiency and effectiveness of guidance and counseling services. However, the integration of technology into these services remains limited. (Beidoɨlu et al., 2015) found that computer-based information systems can assist guidance and counseling teachers in managing data more effectively. Nevertheless, Hanley (2021) demonstrated that the integration of guidance and counseling services with school academic information systems is still rarely implemented. Furthermore, the potential synergy between microsites and school information systems has yet to be extensively explored (Karan & Angadi, 2023).

The suboptimal nature of guidance and counseling services has negative implications for both students and schools. (Haleem et al., 2022) emphasized that without proper evaluation, progress in service delivery cannot be monitored, making it difficult to achieve educational goals. Students today live in a digital era, where conventional services alone are insufficient to meet their needs. The imbalance in the ratio of guidance and counseling teachers to students, along with the lack of proper service documentation, also complicates schools' efforts to monitor student development. Brown’s research (2018) highlights the limited number of studies evaluating the impact of microsite usage on the quality of guidance and counseling services.

Technological innovations such as microsites and web-based applications can serve as solutions to enhance the quality of guidance and counseling services. This aligns with the research by (Dwi Wicaksono et al., 2023) who developed the I Need Counseling (INC) application based on Google Sites, which was found to be valid and practical for counseling services. Similarly, Yulia (2023) demonstrated that Google Sites is effective

as a medium for guidance and counseling services. The integration of such technologies can assist guidance and counseling teachers in managing data, designing programs, and monitoring services more efficiently. However, Pincus et al., (2020) emphasized the need to optimize the features and content of microsites to support these services.

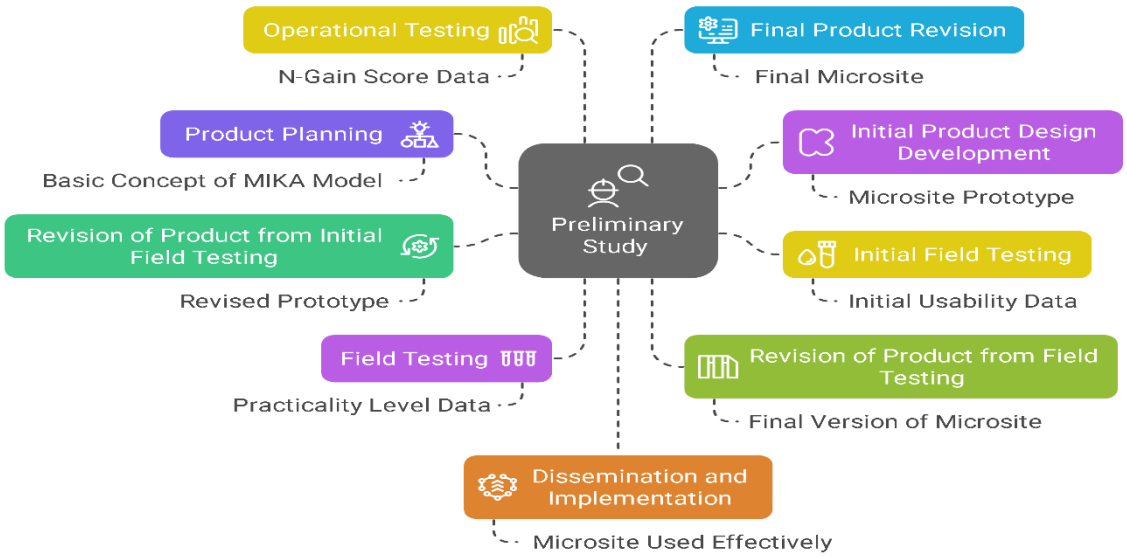
This research aims to identify challenges in the implementation of guidance and counseling service management and to develop an effective technology-based service model. By integrating microsites into the school information system, it is expected that guidance and counseling services can be managed more efficiently, enhancing accessibility for students and supporting the development of digital skills. This research is expected to provide new insights into the optimization of technological features and serve as a reference for the future development of guidance and counseling services. Kettunen et al., (2015) emphasized the importance of a framework or model that can serve as a reference for developing effective and integrated microsite-based guidance and counseling services.

2 METHOD

This research employs a Research and Development (R&D) approach to develop a microsite-based management model for guidance and counseling services (Yuliana et al., 2025). The research subjects include guidance and counseling teachers and high school students in Kendari City, selected using purposive sampling techniques Creswell (2014) with the consideration that the selected schools already have guidance and counseling teachers, stable internet access, and adequate technological resources. The research procedure follows the stages outlined by Borg & Gall (1983), starting with a preliminary study to identify potential and problems, product planning, initial product development, initial field trials, revisions based on initial field trials, field trials, and operational testing using a nonequivalent comparison-group design (May & Collier, 2023).

Figure 1

Diagram Development of Mika Model



The research instruments include validation questionnaires for material experts, media experts, and practitioners to assess the feasibility of the model, as well as questionnaires and observation guidelines administered to teachers and students to measure the practicality and effectiveness of the product. Data were collected through interviews, observations, and field testing involving 35 students during the initial field trial, 105 students during the field trial, and 350 students during the operational testing phase. Data analysis was conducted using descriptive quantitative methods, including Likert scale score conversion for product feasibility (Akbar, 2013), percentage analysis for practicality (Molli, 2020) and N-gain analysis along with an independent sample t-test using SPSS version 30 for effectiveness. The success criteria were set at a minimum of 70% for both practicality and product effectiveness.

3 FINDINGS AND DISCUSSION

3.1 Findings

The research procedure follows the ten-step Research and Development model by Borg & Gall (1983) consisting of: (1) preliminary study to identify potential and problems; (2) product planning; (3) initial product development; (4) initial field trials; (5)

revision of the product based on initial field trial results; (6) field trials; (7) revision of the product based on field trial results; (8) operational testing; (9) final product revision; and (10) dissemination and implementation. The research instruments include validation questionnaires for material experts, media experts, and practitioners to assess the feasibility of the instruments, as well as response questionnaires for teachers and students to measure the practicality and effectiveness of the product. Data were collected through interviews, observations, document studies, and field testing, involving 35 students during the initial trials, 105 students during the field trials, and 350 students during the operational testing phase. Data analysis was conducted using descriptive quantitative methods to assess product feasibility, percentage analysis to evaluate product practicality, and N-gain analysis along with an independent sample t-test to examine product effectiveness.

Based on the results of the needs analysis and focused discussions with experts, a concept for developing a microsite-based guidance and counseling service management model was obtained, named the Microsite-Based Guidance and Counseling Service Management Model, or abbreviated as the MIKA Model. This model was developed to assess the feasibility, practicality, and effectiveness of guidance and counseling services in high schools in Kendari City, Southeast Sulawesi. The process begins with a preliminary study, needs analysis, expert validation, field trials, and operational testing. The development of the MIKA model, which focuses on student career guidance, has been proven feasible based on expert validation and initial field trial results.

The need for the microsite-based career management model, or MIKA Model, was assessed by design experts, material experts, and practitioners using a five point Likert scale questionnaire, with a minimum score of 1 and a maximum score of 5. The average results from the feasibility test of the MIKA Model indicate that this model is highly feasible and necessary to enhance career understanding in high schools in Kendari City.

Based on the validity test conducted by the experts, it was found that the development of the MIKA Model was carried out systematically according to the stages. The expert validation results demonstrate that the MIKA Model is highly valid. The feasibility scores provided by the design expert (4.4), material expert (4.4), and practitioner (4.5) further confirm the model's feasibility

Table 1

Design Expert Validation Results

No.	Aspect Evaluated	Average Score	Criteria
1	Appropriateness of strategy	4	Good
2	Accuracy of delivery strategy	5	Very Good
3	Promoting students' critical thinking ability	4	Good
4	Level of contextual relevance	5	Very Good
5	Relative advantage, accuracy of media selection	4	Good
6	Appropriateness and quality of audio and narration utilization	5	Very Good
7	Appropriateness and quality of video utilization	4	Good
8	Accuracy of communication language usage	4	Good
9	Level of interactivity and ease of navigation	5	Very Good
10	Appeal of media packaging	4	Good
Overall Assessment		4.4	Very Good

The validation test results conducted by the design expert indicate that the developed microsite possesses excellent overall quality in terms of its functionality as a medium, readability, technical aspects, and visual appeal. The design aspect as a learning medium received a rating category of "very good" with an average converted score of 4.4, demonstrating that the microsite's design effectively fulfills its function as a medium. Furthermore, in terms of strategy, its ability to encourage critical thinking, contextual relevance, appropriateness, and quality of utility were all rated in the "very good" category. This signifies that the microsite is easy to read and understand, has excellent technical aspects, and features an attractive and engaging design.

Table 2

Results of Material Expert Validation

No.	Aspect Evaluated	Average Score	Criteria
1	Accuracy of Content	4	Good
2	Freedom from Conceptual Errors	5	Very Good
3	Currency and up to date of Material	4	Good
4	Kecakupan dan kedalaman materi	5	Very Good
5	Comprehensiveness and Depth of Material	4	Good
Overall Assessment		4.4	Very Good

The validation test results conducted by the material expert indicate that the content of the developed microsite is of very high quality, as evidenced by its overall accuracy in terms of content correctness, freedom from conceptual errors, relevance, comprehensiveness, depth of material, and the references used. The aspect of content accuracy received a "very good" rating with an average score of 4.4, demonstrating that the microsite's material meets the requirements for guidance and counseling services. This

signifies that the microsite's content is well-structured, easy to understand, and indicates that the developed material is beneficial for supporting the delivery of guidance and counseling services, particularly career guidance. Overall, the microsite design received a "very good" percentage rating, and the high average scores obtained across all aspects indicate that the microsite is not only functional but also user-friendly and visually appealing in terms of content. These factors contribute significantly to enhancing the effectiveness of guidance and counseling services.

Table 3

Practicioner Validation Results

No.	Aspect Evaluated	Average Score	Criteria
1	Ease of Use	4	Good
2	Students' Interest and Motivation to Use	5	Very Good
3	Used for Individual Learning by Students and/or as a Teaching Aid for Teachers	4	Good
4	Promoting Students' Critical Thinking Ability	5	Very Good
5	Level of Contextual Relevance with Application/Implementation	5	Very Good
6	Providing Ease and Speed in Mastering Material, Concepts, and Skills	4	Good
	Overall Assessment	4.5	Very Good

The validation test results conducted by practitioners indicate that the developed microsite possesses very high overall quality in terms of ease of use, user interest, facilitation of student and teacher learning, encouragement of critical thinking, applicability, ease of mastering material, and conceptual skill development. The practitioner validation received a "very good" rating with a converted score of 4.5, demonstrating that the developed microsite is appealing both in terms of layout and color design, as well as the availability of supporting media.

Figure 2

User Interface Microsite of Mika Model

The initial field trial results indicate that the microsite-based career guidance service generally meets the practicality criteria, with an average percentage of 82.12% from student responses, 81.14% from observational data, and 88.14% from teacher responses. This trial involved 35 Grade XII high school students in Kendari. Data collected through student response questionnaires revealed that the majority of students provided positive assessments across all evaluated aspects. The ease to use aspect received a positive rating from 77.14% of respondents, material relevance scored 82.86%, media effectiveness reached 71.43%, language clarity achieved 91.43%, and user satisfaction was rated at 82.86%.

Overall, these results demonstrate that the microsite is easy to use, relevant to student needs, and communicated in clear and communicative language. Meanwhile, observational data showed that the microsite successfully enhanced understanding of the material, practical skills, financial management abilities, self-reflection, and workplace simulations, with an average percentage of 81.14%.

These findings indicate that the microsite not only helps students understand theoretical concepts but also provides real-world experiences that can be applied in daily life. On the other hand, teacher response questionnaires yielded similar results to those of the students, with an average percentage of 88.15%. Teachers gave positive ratings for ease of use (77.24%), material relevance (81.86%), media effectiveness (72.43%),

language clarity (91.40%), and user satisfaction (82.68%). This indicates that teachers were satisfied with the services provided by the microsite and considered it a practical tool to support learning.

The field trial of the microsite product was conducted at three public high schools in Kendari City, namely SMA Negeri 1 Kendari, SMA Negeri 4 Kendari, and SMA Negeri 6 Kendari. The purpose of this trial was to identify product deficiencies, similar to the previous trial, but with a larger sample size, involving a total of 105 students from each school. The majority of students provided positive assessments across all evaluated aspects, with the percentage of "very good" ratings reaching 88.57% for work readiness preparation, 85.71% for user satisfaction, and 82.86% for improved understanding. Observations of the students also revealed positive impacts of using the microsite on material comprehension (73.34%), practical skills (88.57%), financial management (76.19%), self-reflection (82.86%), and workplace simulations (85.71%).

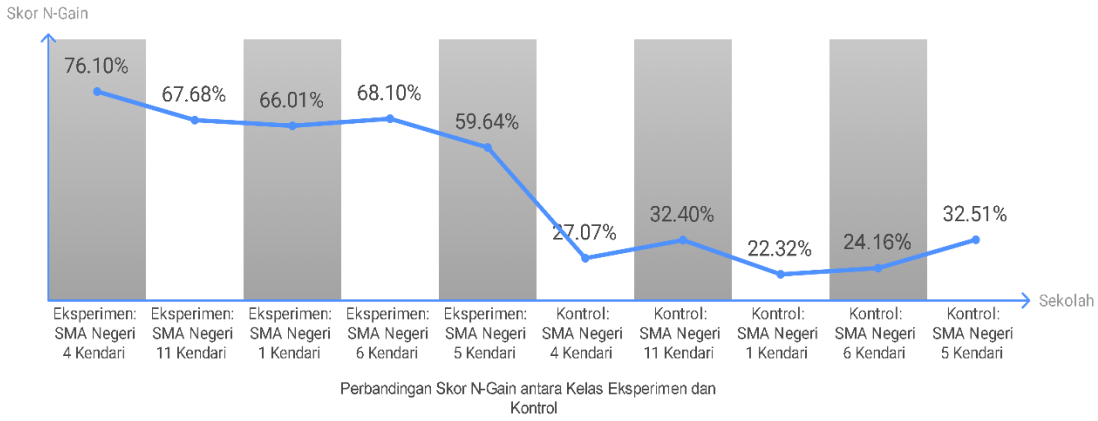
This indicates that the microsite not only helps students understand theoretical material but also provides practical experiences relevant to the working world. Increased student interest and motivation in learning became one of the indicators of the microsite's success as a learning medium. Observational data further demonstrated that the use of the microsite had a positive impact on material comprehension (73.34%), practical skills (88.57%), financial management (76.19%), self-reflection (82.86%), and workplace simulations (85.71%).

The teacher response questionnaire results at SMA Negeri 1 Kendari also indicated that the microsite was designed in accordance with student needs and development, with a "very good" rating percentage reaching 88.00%. Furthermore, the teacher response questionnaire results at SMA Negeri 4 Kendari also showed excellent results, with a rating percentage of 85.50%, indicating that the microsite and its content met user expectations. Additionally, the teacher response questionnaire results at SMA Negeri 6 Kendari demonstrated that the microsite and its content received a "very good" rating, with a percentage of 86.20%.

The operational testing conducted at five schools in Kendari City—SMA Negeri 1, SMA Negeri 4, SMA Negeri 5, SMA Negeri 6, and SMA Negeri 11—provided an in-depth understanding of the effectiveness of using the microsite as a career guidance learning medium. This trial involved a total of 350 students divided into experimental and control groups in each school, with each group consisting of 35 students.

Figure 3

Graph of Operational School Testing



The graph above shows that the average N-Gain scores for the experimental class were consistently higher than those of the control class across all schools. This indicates that the use of the microsite as a learning medium had a significant positive impact on improving students' understanding of career-related topics. For instance, at SMA Negeri 4 Kendari, the average N-Gain score for the experimental class reached 76.10%, while the control class only achieved 27.07%. A similar pattern was observed at SMA Negeri 1 Kendari, SMA Negeri 6 Kendari, SMA Negeri 5 Kendari, and SMA Negeri 11 Kendari.

Based on the graph, the experimental classes in all schools achieved N-Gain scores ranging from a minimum of 59.64% (SMA Negeri 5 Kendari) to a maximum of 76.10% (SMA Negeri 4 Kendari), falling into the "effective" or "moderately effective" category. In contrast, the control classes in all schools only achieved N-Gain scores ranging from a minimum of 22.32% (SMA Negeri 1 Kendari) to a maximum of 32.51% (SMA Negeri 5 Kendari), which fall into the "ineffective" category. This demonstrates that the microsite significantly enhanced students' understanding compared to conventional methods.

Homogeneity of data statistical tests revealed that the variance of data between the experimental and control groups was homogeneous across all schools (p-value > 0.05 in Levene's Equality of Variance test). This ensures that the differences in results between the two groups can be considered valid and statistically significant.

4 DISCUSSION

The development research of the MIKA Model (Microsite-Based Guidance and Counseling Service Management) presents an innovative solution to enhance the quality of career guidance services in high schools in Kendari City. Validation results from design experts, material experts, and guidance and counseling practitioners indicate that the microsite has excellent feasibility, with average scores ranging from 4.4 to 4.5 on a 5-point scale, demonstrating that the product is effective, relevant, and user-friendly. This aligns with Borg & Gall (1983) theory on product development through systematic stages, starting from problem identification to operational testing. In this context, the MIKA Model not only meets technical aspects such as content clarity and ease of navigation but also supports technology-based learning principles that are adaptive to student needs. According to Gunawan (2018), guidance and counseling management should encompass systematic planning, organizing, implementation, and evaluation. The MIKA Model successfully addresses these challenges by providing a digital platform that assists BK teachers in managing data in a structured manner and delivering more efficient services.

The field trial results indicate that the microsite has a high level of practicality, with an average percentage of 82.12% from student responses and 88.14% from teacher responses. These findings align with Anisah (2019) perspective, which states that technology-based information systems can assist guidance and counseling teachers in managing data more effectively, such as preparing reports and enabling quick information retrieval. Furthermore, the operational test results show that the N-Gain scores for the experimental class were significantly higher than those for the control class, with an average score reaching 76.10%. This supports Hake (1999) theory on the effectiveness of learning through the use of digital media, demonstrating that technology can significantly enhance students' understanding. The use of the microsite is also consistent with Tuazon & Tacuban (2017) idea that information technology can assist teachers and policymakers in formulating guidance and counseling programs based on student needs.

This study indicates that students demonstrated strong interest in the innovative counseling media developed, which they perceived as capable of effectively meeting their needs for accessible information and support. This finding suggests that the integration of technology into guidance services can significantly enhance student engagement and broaden access to counseling resources. The researchers note that the success of this

research and development project highlights the relevance and substantial potential of microsites as a tool for implementation within school environments, particularly at the senior high school level.

Furthermore, this developmental model can serve as a reference for future learning initiatives. In relation to the broader development of technology-based guidance and counseling services, this study also aligns with previous research exploring the use of digital media in education (Misra & Castillo, 2015; Alharbi, 2020), reinforcing the growing importance of technological integration in supporting student development and learning outcomes.

However, this research also highlights several challenges, such as the minimal integration between guidance and counseling services and the school's academic information system Hanley (2021) as well as the untapped potential for synergy between microsites and school information systems (Amoah & Emmanuel, 2020). Additionally, the research findings indicate that the effectiveness of the microsite depends on supporting factors, including teachers' ability to integrate technology, student motivation, and content relevance. Therefore, a framework or reference model is needed to optimize the features and content of the microsite, as suggested by (Chhabra et al., 2022; Nurhasanah & Nida, 2016; Samad & Malik, 2023). Overall, this study demonstrates that the MIKA Model has significant potential to enhance the quality of guidance and counseling services.

5 CONCLUSION

The development research of the MIKA Model (Microsite-Based Guidance and Counseling Service Management) which integrates technology into career guidance services in high schools in Kendari City, addresses the lack of systematic integration between digital platforms and traditional counseling services by offering a structured, microsite-based solution that improves accessibility, efficiency, and interactivity in guidance and counseling services. The MIKA model leverages web-based technologies to streamline service management, support personalized learning, and increase student engagement. This innovation not only facilitates better data organization and monitoring for counselors, but also aligns with students' digital skills, making it a forward-thinking solution to optimize guidance and counseling service practices in schools. Future

researchers are encouraged to evaluate the long-term impact of microsite usage on students' psychological well-being, academic achievement, and career decision-making, including how Artificial Intelligence (AI) can facilitate guidance and counseling services.

6 RECOMMENDATION

The recommendations derived from this research and development are addressed to the relevant education authorities, school principals, guidance counselors, parents, and future researchers. These suggestions are presented as follows:

Considering the weaknesses identified during the study, it is recommended that schools conduct periodic evaluations of their guidance and counseling services in order to detect emerging issues at an early stage and implement appropriate solutions. To address challenges such as inadequate facilities or limited institutional support, school principals are advised to place greater emphasis on the development of comprehensive guidance and counseling programs. In this regard, guidance counselors are encouraged to enhance their professional competencies through relevant training sessions or workshops, particularly in the integration of information technology to support and enrich counseling delivery.

Creating a supportive environment for effective guidance and counseling services requires collaboration among all stakeholders. This is especially important in promoting the principles of Gender Equality, Disability, and Social Inclusion (GEDSI), which can be facilitated by involving parents in the counseling process through digital platforms such as microsites. Guidance counselors should continuously update their knowledge and adapt to technological advancements, as these developments can significantly improve the efficiency and reach of their services.

It is further recommended that the local Department of Education provide regular training for guidance teachers on contemporary counseling methods and techniques, particularly those aligned with the evolving digital landscape. Schools in Kendari are advised to ensure that guidance counselors are allocated sufficient time to focus exclusively on their core responsibilities, without being overburdened by excessive administrative tasks.

The guidance and counseling platform developed in this study is based on a microsite format. Future researchers are encouraged to investigate the long-term impact

of such platforms on students' psychological well-being, academic performance, and career decision-making processes. Additionally, further exploration is needed regarding the potential of Artificial Intelligence (AI) to enhance personalized counseling services, for instance by generating tailored career recommendations based on individual student preferences, interests, and aptitudes.

ACKNOWLEDGMENT

We thank the Head of the Kendari Provincial Education Office for their invaluable support in conducting this research.

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

How to cite this article (APA)

Anwar, R., Anwar, Abubakar, S. R., & Mokui, H. T. (2026). DEVELOPMENT OF AN INNOVATIVE MICROSITE-BASED CAREER GUIDANCE AND COUNSELING MANAGEMENT MODEL. *Veredas Do Direito*, 23(1), e234274. https://doi.org/10.18623/rvd.v23.n1.4274