

## Technology and Culture-Based Career Guidance Strategies in Secondary Schools

Agus Setiawan<sup>1,1</sup>, Palasara Brahmani Laras<sup>2</sup>, Adi Atmoko<sup>3</sup>, Arbin Janu Setiyowati<sup>4</sup>, Punaji Setyosari<sup>5</sup>, Nur Eva<sup>6</sup>

Guidance and Counseling Department, Faculty of Education,  
Universitas PGRI Semarang, Indonesia<sup>1</sup>

Guidance and Counseling Department, Faculty of Education,  
Universitas Negeri Malang, Indonesia<sup>1</sup>

Guidance and Counseling Study Program, Faculty of Teacher Training and Education,  
Universitas Mercu Buana Yogyakarta, Indonesia<sup>2</sup>

Guidance and Counseling Department, Faculty of Education,  
Universitas Negeri Malang, Indonesia<sup>3</sup>

Guidance and Counseling Department, Faculty of Education,  
Universitas Negeri Malang, Indonesia<sup>4</sup>

Guidance and Counseling Department, Faculty of Education,  
Universitas Negeri Malang, Indonesia<sup>5</sup>

Guidance and Counseling Department, Faculty of Education,  
Universitas Negeri Malang, Indonesia<sup>6</sup>

E-mail: [agussetiawan@upgris.ac.id](mailto:agussetiawan@upgris.ac.id)<sup>1,1</sup>, [palasara@mercubuana-yogya.ac.id](mailto:palasara@mercubuana-yogya.ac.id)<sup>2</sup>,  
[adi.atmoko.fip@um.ac.id](mailto:adi.atmoko.fip@um.ac.id)<sup>3</sup>, [arbin.janu.fip@um.ac.id](mailto:arbin.janu.fip@um.ac.id)<sup>4</sup>, [punaji.setyosari.fip@um.ac.id](mailto:punaji.setyosari.fip@um.ac.id)<sup>5</sup>,  
[nur.eva.fppi@um.ac.id](mailto:nur.eva.fppi@um.ac.id)<sup>6</sup>

Correspondent Author: Agus Setiawan, [agussetiawan@upgris.ac.id](mailto:agussetiawan@upgris.ac.id)

Doi: 10.31316/g-couns.v10i03.7974

### Abstract

This study examines the implementation of career guidance and counseling in high schools using a Systematic Literature Review (SLR) approach. The authors reviewed 26 papers that met the exclusion criteria related to career guidance. Among these, 10 papers were selected based on inclusion criteria relevant to career guidance and counseling in secondary schools during the period 2014-2024. This study aims to identify trends, approaches, and interventions that effectively prepare students for career challenges. The results show that integrating digital technology, culture-based approaches, and hands-on field experience is the primary strategy for improving students' career readiness. However, challenges such as limited resources, gaps in access to technology, and a lack of training for supervisors remain obstacles to implementation. Therefore, cross-sector collaboration is considered essential to create a career guidance system that is adaptive, inclusive, and responsive to global demands.

**Keywords:** career guidance, high school, systematic literature review, digital technology, local culture

### Article info

Received June 2025, Revised August 2025, Accepted August 2025, Published April 2026

#### How to Cite:

Setiawan, A., Laras, P. B., Atmoko, A., Setiyowati, A. J., Setyosari, P., & Eva, N. (2026). Technology and Culture-Based Career Guidance Strategies in Secondary Schools. *G-Couns: Jurnal Bimbingan Dan Konseling*, 10 (03), July, 2392-2405. <https://doi.org/10.31316/g-couns.v10i03.7974>

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Available online at <https://journal.upy.ac.id/index.php/bk/index>



## INTRODUCTION

Students' career readiness in secondary school is a primary focus in today's educational landscape, especially in the era of globalization and digitalization, which demands increasingly diverse and complex skills (Gee et al., 2021; Yousef, 2024). High schools are not only required to provide academic knowledge but also to equip students with relevant skills for the world of work and further education. This is important because students with a strong understanding of career readiness can determine educational paths that suit their interests and talents, thereby reducing unemployment rates and increasing the productivity of future generations (Gashi et al., 2023; Rezaiee & Kareshki, 2024).

Career guidance, therefore, has become an essential component of the secondary education system. Various approaches have been implemented to increase the effectiveness of career guidance in high school. One of them is an integrative approach that utilizes digital technology. Technology provides students with a wide range of career information and educational paths through e-counseling platforms and interactive career apps. This approach enables students to independently explore career options, identify required competencies, and discover available educational opportunities. Research by van Schalkwyk et al. (2022) in South Africa demonstrates that technology-based career guidance can enhance students' awareness and career readiness, particularly during the COVID-19 pandemic, when face-to-face interactions were limited. These findings indicate that technology integration is not only a short-term solution but also a long-term strategy in the context of post-pandemic education.

In addition to technology integration, culture-based approaches have also proven effective in implementing career guidance. In different countries, local cultural values are integrated into tutoring programs to make them more relevant and accepted by students in a region. For example, Dama (2019) emphasizes the importance of a contextual approach to local culture for guiding students in Nigerian secondary schools. This approach strengthens students' cultural identities by guiding their career choices in line with applicable social norms and values.

An experiential learning-based approach is also increasingly being applied. Experiential learning programs, such as internships and collaborative projects at specific institutions, allow students to experience the work environment firsthand. Additionally, the program helps students develop essential social skills, including teamwork, interpersonal communication, and problem-solving (Nykänen et al., 2023). Experiential learning and peer learning have been proven highly effective in enhancing students' career readiness by strengthening their social and collaborative skills.

However, there are still challenges in implementing practical career guidance in high school, especially in developing countries. Limited resources, lack of professional training for career guidance teachers, and restricted access to technology are significant barriers. Therefore, collaboration among the government, educational institutions, and the broader community is necessary to ensure that career guidance programs operate effectively and meet the needs of students from diverse socio-economic backgrounds (Akyol & Bacanlı, 2019; Bright et al., 2023; Sek-yum Ngai et al., 2023). This collaboration is also crucial to overcoming the limitations of digital infrastructure that many schools continue to face.

Nonetheless, there are still challenges in implementing practical career guidance in high school, particularly in developing countries. Limited resources, lack of professionals, Training for career guidance teachers, and restricted access to technology are significant barriers. Therefore, collaboration among the government, educational



institutions, and the broader community is necessary to ensure that career guidance programs operate optimally and address the diverse needs of students from various socioeconomic backgrounds, as well as the digital infrastructure limitations faced by most schools. Based on this background, the problem in this study is: "How effective is the integration of digital technology, local culture-based approaches, and experiential learning in improving the career readiness of high school students in Indonesia?" By answering this question, this article aims to make a conceptual and practical contribution in developing career guidance models that are more inclusive, innovative, and adaptive to the needs of the times and local contexts.

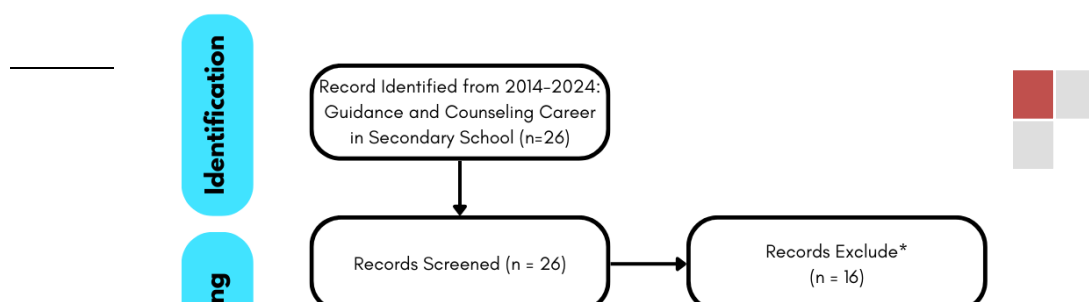
## METHOD

This study uses the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology to systematically identify, select, and analyze relevant literature (Gusenbauer & Gauster, 2025; Herlina & Juandi, 2022; Pati & Lorusso, 2018). The initial stage of article search was conducted on international databases, namely Scopus and Google Scholar, using the keywords "career guidance in secondary school," "career counseling," "secondary education," and "student career readiness." This search focused on publications from 2014 to 2024, yielding 26 documents as preliminary data.

Furthermore, the documents found were selected based on strict inclusion and exclusion criteria. The inclusion criteria encompass English-language journal articles and conference proceedings, focusing on the social sciences and psychology, and specifically discussing career guidance and counseling in high school settings. Irrelevant documents, not scientific articles, using languages other than English, or duplicates, are excluded from the analysis. At the screening stage, a review of titles and abstracts was conducted, resulting in the exclusion of 16 documents due to inconsistencies.

The next stage is the feasibility evaluation, conducted through an in-depth review of the remaining 10 documents to assess the suitability of the content and the quality of the methodology. All remaining papers were declared worthy of analysis. To maintain data quality, each article is evaluated using a standard evaluation tool that assesses methodological rigor, clarity of purpose, data validity, and relevance to the research topic.

The data synthesis is conducted qualitatively using narrative and thematic approaches. In the thematic approach, key themes are identified based on patterns and trends emerging from the article analysis, as well as by comparing studies to identify research gaps related to career guidance at the secondary school level. Each identified theme is verified to ensure its consistency and relevance to the research question. The resulting findings were grouped by key themes and compared between studies to produce comprehensive conclusions that supported the development of career guidance and counseling practices in secondary schools.



**Figure 1.** PRISMA Flow Diagram of Article Selection on Career Guidance and Counseling in Secondary Schools from 2014 to 2024.

## RESULTS AND DISCUSSION

### Results

The study of high school career guidance has been conducted with various focuses, methods, and contexts. Some of the studies include bibliometric analyses describing literature trends (No. 1), experimental studies assessing the effectiveness of program interventions (No. 5), surveys examining psychosocial and cultural factors (No. 7, No. 9), and qualitative approaches evaluating career guidance service models (No. 4). Variations in geographic contexts and methods used show differences in perspectives and approaches to career guidance, including the role of teacher support (No. 6), career adaptability development (No. 9, No. 10), and integration of local cultural values (No. 7).

However, most studies focus on a single approach or aspect without thoroughly integrating complementary approaches. For example, the effectiveness of peer and experiential learning was examined in study (No. 2). In contrast, study (No. 3) focused on the factors that influence counselor and teacher recommendations regarding students' career choices. However, there is a lack of research that comprehensively investigates the incorporation of technology, culture, and experiential learning in high school career guidance, especially in fields with high social and economic diversity.

The following table summarizes some key studies that highlight differences in focus, respondent levels, methods, and outcomes, underscoring the need for a more integrative and contextual career guidance model.

**Table 1.**



The Articles That Have High Relevance To The Research Theme

Author (Year)	Title	Respondent Level	Method	Results
Pham et al (2024)	Science mapping research on Career guidance in general schools: a bibliometric analysis from Scopus database, 1964–2022	General School	Bibliometric Analysis	Trends in career guidance literature and evolution of approaches
Nykänen et al (2023)	Conceptual replication of an evidence-based peer learning programme to enhance career preparation - a cluster randomized controlled trial (RCT)	Secondary School	Cluster Randomized Controlled Trial (RCT)	Peer learning showed effectiveness in career preparation
Wichgers et al (2023)	Study profile choices in secondary education: searching for factors underlying the recommendations made by school guidance counsellors and tutors to vignette students	Secondary School	Mixed-Methods	Factors identified influencing guidance counselor recommendations
Mathiesen & Gunnarsdottir (2022)	Separate counselling services in Norwegian upper secondary schools. A possibility for a collective holistic approach?	Secondary School	Qualitative	Holistic approach deemed feasible for implementation
David et al (2022)	Exploring the impact of a career guidance intervention program in	Secondary School	Experimental	Positive self-assessment of career guidance effects



	schools: Effects on knowledge and skills as self-assessed by students				
Yang & Wong (2020)	Career guidance and counselling: the nature and types of career-related teacher social support in Hong Kong secondary schools	Secondary School	Mixed-Methods		Teacher support crucial for effective guidance
Dama, et al (2019)	Promoting career guidance and counselling of secondary school learners: Implication for policy and practice	Secondary School	Survey		Policy and practice implications discussed
Korna-Opincane & Katane (2018)	Topicality of career guidance at schools for promoting of students' professional self-determination	Secondary School	Mixed-Methods		Career guidance found to promote self-determination
Karacan–Ozdemir & Yerin Guneri (2017)	The factors contribute to career adaptability of high-school students	High School	Survey		Key factors affecting high school students' adaptability identified
Galliott et al (2015)	Who Struggles Most in Making a Career Choice and Why? Findings from a Cross-Sectional Survey of Australian High-School Students	High School	Cross-Sectional Survey		Barriers and supports for career decision-making identified

Furthermore, the data documents obtained revealed that researchers employed various research methods in studies related to career guidance between 2014 and 2024. Among the overall data, survey methods are the most widely used by the authors, such as Galliott et al. (2015), Karacan–Ozdemir & Yerin Guneri (2017), and Dama (2019). The choice of this survey method suggests that the quantitative approach questionnaires



remain preferable because they can accommodate a large sample and provide a broad picture of the phenomenon being researched in the context of career guidance.

In addition to surveys, cross-sectional survey methods are often used, especially by authors who have conducted research in recent years, such as Pham et al (2024). This method enables researchers to observe at a specific point in time, providing an overview of study participants' condition or behavior in the context of career guidance. This approach helps clarify the current situation and ongoing dynamics without requiring continuous observation.

The mixed-methods approach also received considerable attention, as exemplified by David et al. (2022). This method combines quantitative and qualitative approaches. The use of mixed methods enables researchers to integrate representative numerical data with rich, contextually meaningful qualitative data, thereby providing a deeper and more comprehensive understanding of the processes and outcomes of career guidance.

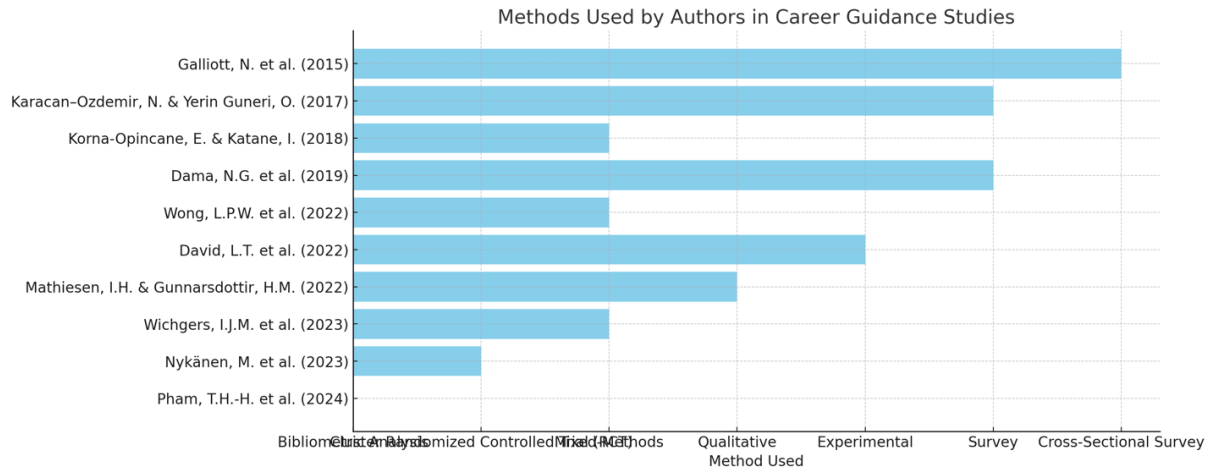
Research on career guidance in high school reveals a diverse range of focuses, methods, and contexts employed. Some of the approaches identified include bibliometric analysis, quantitative surveys, qualitative research, experiments, and randomized controlled trials (RCTs) that assess the effectiveness of intervention programs, teacher support, and the impact of local culture. Although diverse, most of the findings are more descriptive and less in-depth relevant to the Indonesian context.

No less important, some studies have adopted a qualitative approach, as seen in the work of Mathiesen & Gunnarsdottir (2022) and Wichgers et al. (2023). This qualitative approach focuses on an in-depth exploration of participants' experiences, views, and social contexts regarding career guidance, which quantitative data cannot fully capture. This research examines the subjective aspects and nuances that influence the career development process through interviews, group discussions, and observations.

Overall, this graph illustrates significant diversity in the research methods employed in career guidance, including traditional and cross-sectional surveys, mixed-methods approaches, and experimental and qualitative methods. This diversity suggests that research in career guidance is constantly evolving to meet the need for a more comprehensive, in-depth understanding of career phenomena and the effectiveness of the coaching process. This trend also suggests that combining quantitative and qualitative approaches is increasingly accepted as an effective strategy for comprehensively understanding the complexity of career guidance issues.



**Graph 1.**  
**Research Methods**



Then, the respondent level used in various studies on career guidance ranges from elementary to high school. The respondent level is represented on the horizontal axis, while the vertical axis displays a list of studies, including the year and the primary author's name.

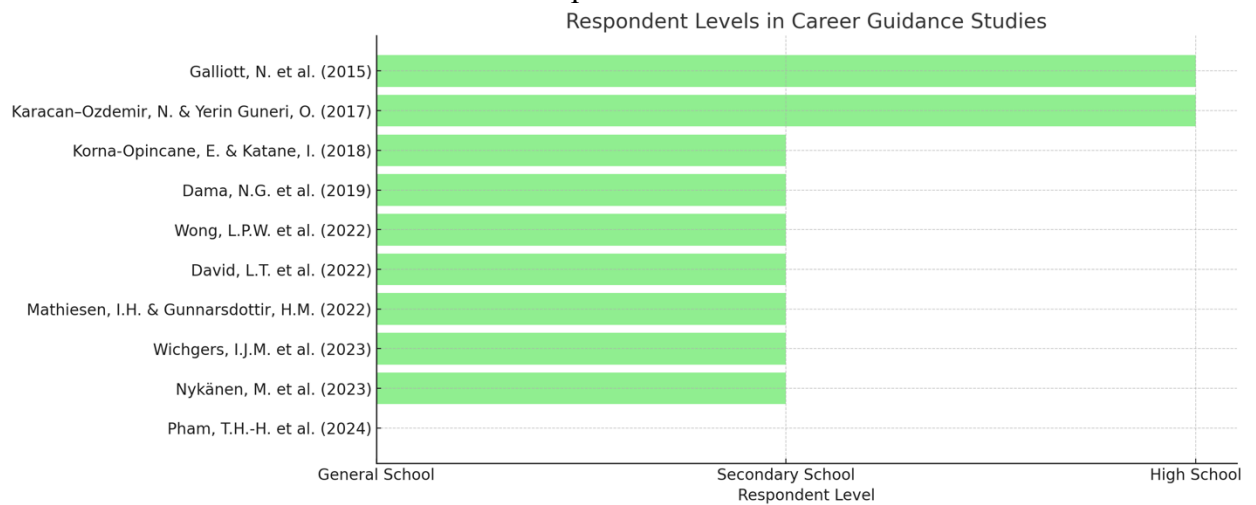
Most studies used primary and junior high school respondents, with little or no research involving secondary school respondents. Research conducted by Galliot et al. (2015) and Karacan–Ozdemir & Yerin Guneri (2017) with large numbers of elementary school respondents, near the top of the scale in that category. This shows a strong focus on career guidance at the early education level.

In addition, many studies, such as Korna-Opincane & Katane, (2018), Dama, (2019), Yang & Wong, (2020), as well as several studies from 2022 to 2024 such as David et al., (2022), Mathiesen & Gunnarsdottir, (2022), Wichgers et al., (2023), Nykänen et al., (2023), and (Pham et al., 2024), also used many respondents from junior high schools. This shows considerable attention to career guidance, which is more important for adolescent development. Interestingly, this graph does not show any studies using respondents at the high school level, indicating gaps or opportunities for further research at that level.

Overall, this graph shows that career guidance research from 2014 to 2024 focused more on the elementary and junior high school levels, while the secondary school level still received less attention. This consideration can guide researchers and educational practitioners in developing more comprehensive studies and interventions across all levels of education related to students' career readiness.



**Graph 2.**  
Research Respondent Rate



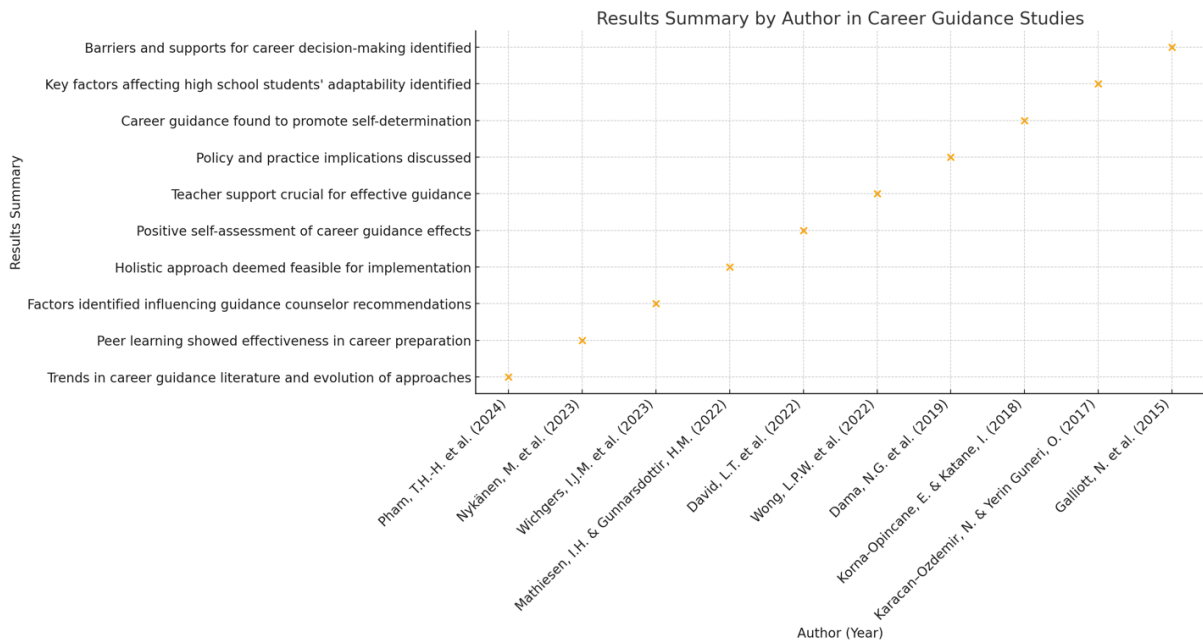
This graph summarizes findings from various essential studies in career guidance published between 2015 and 2024. Initial research by Galliot et al. (2015) highlighted the development of the literature and the evolving approach to around-the-clock career guidance. Subsequent studies focused on the effectiveness of peer learning in preparing students for their careers and the factors influencing the recommendations given by counselors and school supervisors. These results confirm the importance of social interaction and support among students in the career guidance process.

In addition, research conducted between 2018 and 2022 highlights the need for a holistic approach and underscores the critical role of teacher support in making career guidance practical. An optimistic assessment of the impact of mentorship is also a concern, suggesting that the success of career guidance depends not only on the methods used but also on the school environment and the teacher-student relationship. Recent studies by Pham et al. (2024) and Nykänen et al. (2023) highlight the barriers and supporting factors in career decision-making, as well as the key elements that influence the adaptability of high school students. These findings underscore the importance of understanding students' contexts and characteristics to enable them to navigate career challenges in an era of rapid change.

Thus, career guidance has been shown to increase students' self-determination in choosing their career paths, which is crucial for preparing them for the workforce and further education. Overall, this graph illustrates the progression of career guidance research from literature review to application practice, emphasizing a holistic approach, social support, and student adaptability as the primary factors contributing to career guidance success in high school today.



**Graph 3.**  
 Conclusion of Research Results



## Discussion

One of the key findings of this analysis is the limited research that combines technology-based approaches, local cultural values, and experiential learning into a single, integrated career guidance model in Indonesia. The integration of these three elements has strong potential to enhance students' career readiness amid rapid social and technological change. (Goodrich et al., 2020; Liu et al., 2024; Nag & Kumar Nial, 2024). For example, the value of local culture can be linked to theories of career maturity and career adaptability, in which local culture and identity play an important role in shaping students' career choices and motivation. The use of inclusive digital media can be analyzed through the lens of career information processing and social learning theory. At the same time, direct experience through internships or community projects can be explained by the concepts of experiential learning (Kolb) and career exploration.

Although these three approaches are practical individually for improving students' career readiness, the results of this review confirm that their integration remains minimal, especially in the Indonesian secondary school environment. This is a significant concern, given the complexity of students' characteristics and the diverse infrastructure challenges the country faces. The integration of digital technology, local cultural values, and experiential learning has not been pursued simultaneously within a contextual and inclusive career guidance model, thereby limiting the potential for synergy.

The limitations of such incorporation can be understood from the tendency in most research and practice to prefer a partial approach that focuses on a single aspect. For example, digital technology is widely used in career guidance services to expand access and personalize information. However, there is often insufficient attention to adapting content to local culture and wisdom, which significantly influences students' motivation and career choices (Anurogo et al., 2023; Mohamed Hashim et al., 2022; Suryahadikusumah & Nadya, 2020). In contrast, strong culture-based approaches are often hindered by inadequate technological support, limiting their reach and effectiveness.



Additionally, experiential learning, which ideally serves as a bridge between theory and practice in the workplace, has not yet been fully integrated into career guidance services in secondary schools. (Crogman et al., 2025; Naffi et al., 2023). Limited access to internship opportunities, collaborative projects, and other field activities is a significant barrier. This hands-on experience is essential for developing essential soft skills such as communication, teamwork, and problem-solving that cannot be optimally honed through conventional or digital classroom approaches alone.

This gap also presents strategic opportunities for academics and practitioners to develop career guidance models that are more integrative and adaptable to the changing dynamics of the times. The ideal model should incorporate inclusive, accessible digital technologies, local cultural values that reinforce students' identities and motivations, and experiential learning that provides practical, contextually relevant experiences. Empirical research with robust designs, such as randomized controlled trials (RCTs) and mixed-methods studies, is needed to test the effectiveness and limitations of applying this integrative model in Indonesian secondary schools.

Additionally, strengthening the capacity of career supervisors is crucial to supporting the implementation of this model (Indrawan & Lay, 2019; Choi & Park, 2019; Gudmundsdottir & Hatlevik, 2018). A literature review shows that limitations in training and professional development are significant barriers to providing innovative and responsive career guidance services. Therefore, the development of continuous training programs that combine technology mastery, cultural understanding, and experiential learning strategies is needed. Competent and confident teachers will be able to implement a more comprehensive career guidance model and tailor it to students' needs.

This discussion reveals that the challenges in developing an integrative career guidance model in Indonesia extend beyond implementation issues to include theoretical gaps that still require attention. For example, the Super theory of career development has not been widely tested in the Indonesian context, even though it can serve as a basis for designing a career guidance curriculum tailored to the stages of student development. Discussions on the application of relevant career guidance models are also limited, especially in comparing international contexts with local implementations. Some of the studies analyzed were conducted in countries with different education systems, so applying these findings in Indonesia needs to take into account existing social, economic, and cultural differences.

In the policy realm, the results of this study confirm the need for cross-sectoral collaboration among the government, educational institutions, industry, and local communities. Such synergy is essential to provide adequate resources, open opportunities for students to experience the field, and support the development of relevant, contextual career guidance content. With systematic policy support and strategic partnerships, career guidance systems can transform into a sustainable coaching platform that is adaptive to global changes and future challenges. (Dama, 2019; Vlachopoulos & Makri, 2024).

Ultimately, the results of this analysis underscore the importance of developing an integrative career guidance model that involves multiple stakeholders, including the government, education, industry, and society. Ongoing training for career guidance teachers that combines digital, cultural, and hands-on elements is indispensable for supporting students' readiness to face the challenges of an increasingly complex world of work.



## CONCLUSION

The results of this review indicate that the development of career guidance in secondary schools is increasingly incorporating digital technologies, local culture-based approaches, and experiential learning. However, most research still focuses on a single aspect, with no model that fully integrates all three elements. The main limitations of this study are the lack of empirical data on the implementation of integrative models, particularly at the high school level, and the limited attention to variations in social and cultural contexts. Therefore, further research is needed to test the effectiveness of a comprehensive career guidance model using a more robust method and to consider the diversity of student contexts in Indonesia.

In practical terms, the results of this study emphasize the importance of training career guidance teachers to implement holistic and innovative approaches, as well as providing technological facilities and work experience for students. At the policy level, more intensive collaboration among governments, educational institutions, and the industrial sector is needed to develop a career guidance system that is both sustainable and responsive to local and global needs. For scientific contributions, this study suggests piloting a career guidance model integrating digital technologies, local cultural values, and experiential learning through project-based interventions in Indonesian secondary schools as a follow-up step, adapted to the local context.

## ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to Universitas PGRI Semarang, Universitas Negeri Malang, and Universitas Mercu Buana Yogyakarta for their institutional support and facilitative assistance throughout the research process. We also extend our appreciation to all researchers and practitioners whose published works were reviewed in this study, as they provided invaluable insights into the development of career guidance strategies. Furthermore, we thank the Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia for its support for evidence-based practices in secondary education. Lastly, we acknowledge the constructive feedback from anonymous reviewers, which significantly enhanced the quality of this manuscript.

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