Universitas Negeri Padang & Ikatan Konselor Indonesia
Editorial Office: Jurusan Bimbingan dan Konseling | Faculty of Education | Universitas Negeri Padang
Jl. Prof. Dr. Hamka Air Tawar Barat, Kota Padang, Sumatera Barat, 25130, Indonesia.
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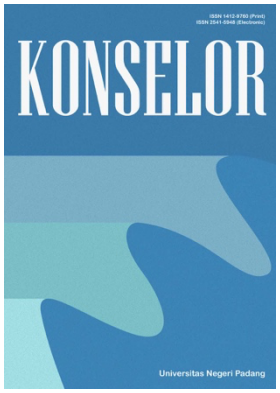
Volume 15 Number 1 2026



KONSELOR

ISSN 1412-9760 (Print) | ISSN 2541-5948 (Online)
Editor: Nilma Zola

Publication details, including author guidelines
URL: https://counselor.ppj.unp.ac.id/index.php/konselor/about/submissions

The Relationship between Digital Literacy, Career Guidance, and Students' Career Planning

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Article History
Received: Monday, December 08, 2025
Revised: Tuesday, February 17, 2026
Published: Tuesday, March 31, 2026

How to cite this article (APA)
Husniah, W. O., Ulfa, M., & Amalia, A. P. (2026). The relationship between digital literacy, career guidance, and students' career planning. KONSELOR, 15(1), 11–18. https://doi.org/10.24036/02026151164-0-86

The readers can link to article via https://doi.org/10.24036/02026151164-0-86

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ISSN 1412-9760 (Print)
ISSN 2541-5948 (Electronics)

Original Article

KONSELOR
Volume 15 Number 1 (2026)
https://doi.org/10.24036/02026151164-0-86

The Relationship between Digital Literacy, Career Guidance, and Students' Career Planning

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Abstract: Digital transformation has significantly altered the manner in which students access and interpret career information, thereby increasing the relevance of digital literacy and career guidance for career planning at the secondary education level. This research investigates the relationships among digital literacy, career guidance, and the career-planning tendencies of senior high school students. A quantitative cross-sectional design was employed, involving 150 senior high school students in Baubau City, Indonesia, selected through convenience sampling. Data were collected utilizing a self-report instrument developed based on theoretical frameworks and tested for validity and reliability within this study. Data analysis was performed using multiple linear regression. The findings indicate that digital literacy and career guidance are positively and significantly correlated with students' career planning, both concurrently and independently, with the model accounting for 35.9% of the variance in career planning. These results suggest that students' career planning is linked to their ability to manage digital-based career information and the reflective support provided through school-based career guidance services. This study offers empirical evidence derived from the context of secondary education in Indonesia, demonstrating the relationship between digital literacy and career guidance in fostering students' career-planning orientation.

Key Words: Digital literacy; Career guidance; Career planning; High school students

INTRODUCTION

Career planning is a crucial developmental task for high school students (Jr et al., 2018; Radcliffe & Bos, 2013; Witko et al., 2005; Zafar, 2019), shaping their readiness for further education and the world of work (Creed et al., 2007; Jr et al., 2018; Rogers & Creed, 2011; Rothwell et al., 2020). During this phase, students must recognise their potential, understand the range of alternatives available, and consider the long-term consequences of their decisions (Arnado & Posadas, 2022; Bettencourt et al., 2022). This process becomes increasingly complex as the diversity of educational pathways and the availability of job information grow (Wang et al., 2023). Field studies show that many students still struggle to choose a career due to limited ability to manage information and systematically organise choices (Gati & Levin, 2014; Kulcsár et al., 2020; Lent, 2013). Unpreparedness in career planning can lead to decisions that are less aligned with students' interests, abilities, and opportunities (Shaun M. Doughery, Allison R. Lombardi, 2016). Career planning does not occur spontaneously; rather, it is a process that requires specific skills.

The ability to access, understand, manage and use digital information intelligently is known as digital literacy (Fırat Kıyas Birel, 2020; Lankshear & Knobel, 2016). Digital literacy is one of the skills related to career planning (Kateryna et al., 2020; Radovanović et al., 2020; Soeprijanto et al., 2022;

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Thelma et al., 2024). In this context, digital literacy supports career exploration and individual readiness to navigate the range of available career options (Mn et al., 2020; Rahmat et al., 2024). However, findings also indicate that many students still face obstacles in digital literacy (Mudra, n.d.), including difficulty operating career development support applications, limitations in utilising career information search platforms, low awareness of the risks of digital technology, and a weak ability to filter relevant information (Lent, 2018; Muthuswamy, 2023; Shopova, 2014; Spurava, 2023). Furthermore, digital literacy is linked to the critical thinking and problem-solving skills needed to develop career plans (Baldwin et al., 2012; Khamdamov, 2025). Digital literacy can be understood as a crucial foundation for supporting students' career readiness in the digital age.

Digital literacy is important, but it still requires systematic support to be integrated into career planning, particularly through career guidance services (Keshf & Khanum, 2021; Soeprijanto et al., 2022). Career guidance helps students organise the career information they receive, including digital information, into more informed self-understanding, goal-setting, and decision-making (Fitzenberger & Hillerich-Sigg, 2020; Roy, 2020). Through career information and self-development activities, students receive guidance in assessing the match between personal potential and educational and employment alternatives (Romanova, 2020; Sidra Shan, 2016). Several studies have shown that student involvement in career guidance services helps students clarify career goals, improve career readiness, and make informed decisions (Dena Madisa, Mamat Supriatna, 2022; Gati & Levin, 2014; Hastin et al., 2022; Hooley et al., 2019; Staunton, 2025). Thus, career guidance helps students use digital literacy in career planning more realistically and contextually (Hooley & Staunton, 2020).

Although digital literacy and career guidance are widely recognised as factors in students' career planning, empirical studies that examine their interrelationship within a single analytical model remain relatively limited, particularly in secondary education in developing countries. Previous research has tended to conceptualise digital literacy as an individual competence operating independently (Kaeophanuek et al., 2018; Mohammadyari & Singh, 2015; Reddy et al., 2023), while other studies have focused on career guidance as an institutional service without sufficiently considering the role of students' digital competencies in interpreting increasingly complex career information (Hariko, 2024; Sharapova, 2023; Shaun M. Dougherty & Allison R. Lombardi, 2016). This leaves a gap in understanding how individual capabilities and school-based career guidance jointly contribute to students' career planning (Covacevich et al., 2021; OECD, 2024). Therefore, this study offers novelty by examining digital literacy and career guidance as predictors, simultaneously analysed in relation to students' career planning through multiple linear regression, thereby providing a more integrative understanding of the factors associated with students' career planning in the digital era.

Theoretically, this study is expected to enrich the literature on guidance and counselling, as well as educational psychology, by providing empirical insights into the relationships among digital literacy, career guidance, and students' career planning. From a practical perspective, the findings are anticipated to serve as a reference for school counsellors and educators in developing career guidance services aligned with the demands of digital information-based career exploration. In addition, the results may inform educational policymakers in designing digital literacy strengthening programmes that are integrated with students' career development. Accordingly, this study offers a relevant empirical contribution to supporting more structured and adaptive career planning among students in response to the dynamics of the contemporary world of work.

METHOD

Participants

The participants were senior high school students enrolled in public schools in Baubau City, Southeast Sulawesi, Indonesia. They were drawn from Grades 10 to 12 and ranged in age from 15 to 18 years. A key developmental task for senior high school students is to develop readiness for the world of work or career development (Manning, 2002). All participants were actively enrolled at the time of data collection and participated voluntarily in the study. All participants resided in Baubau City, Southeast Sulawesi.

Sampling

The sample was selected using a non-probability convenience sampling technique, taking into account limitations in field access, time efficiency, students' willingness to participate, and the practicalities of reaching senior high school students through schools (Creswell, 2012; Dillman et al., 2016). Recruitment was conducted online via Google Form links shared on WhatsApp. Of the 500 students approached, 150 volunteered to participate, yielding a final sample of 150. All participants were actively enrolled students residing in Baubau City, Southeast Sulawesi, Indonesia. Participation was voluntary, and informed consent was obtained from all participants prior to data collection. No monetary compensation was provided. Data were collected remotely, allowing participants to complete the survey at their convenience.

Instrumentations

This study used three main questionnaires as data collection instruments: the Digital Literacy Questionnaire, the Career Guidance Questionnaire, and the Career Planning Questionnaire. All questionnaires were administered in Indonesian and adapted to the context of high school students in Baubau City, Southeast Sulawesi.

The Digital Literacy Questionnaire was developed based on existing digital literacy frameworks (Kaeophanuek et al., 2018; Mohammadyari & Singh, 2015) and comprises 15 items. It measures students' ability to search for, evaluate, and utilise digital information for learning and career goals. The Career Guidance Questionnaire was adapted from existing career guidance evaluation tools (Sharapova, 2023; Hariko, 2024) and also comprises 15 items. It assesses students' perceptions of school-based career guidance services. The Career Planning Questionnaire, developed specifically for this study based on career development principles (Manning, 2002), comprises 15 items that measure students' readiness and strategies for planning their future careers. All questionnaires used a 4-point Likert scale.

The validity of each item was assessed using Pearson Product-Moment correlation in IBM SPSS. The analysis showed that all items across the three questionnaires had significant item-total correlations ($r \geq 0.30$, $p < 0.05$), indicating validity and suitability for use. The internal consistency of the instruments was assessed using Cronbach's alpha, yielding values of 0.876 for digital literacy, 0.961 for career guidance, and 0.847 for career planning. These values indicate good to excellent reliability, and all three questionnaires were deemed adequate for further analysis.

Procedures

Participants accessed the survey via links distributed by school guidance and counselling teachers and through official WhatsApp groups. They first read the information sheet and provided electronic informed consent before proceeding. They then completed the sequence, which included eligibility verification and three questionnaires covering digital literacy, career guidance, and career planning. Each questionnaire comprised 15 items rated on a 4-point Likert scale, and the entire process took approximately 10–15 minutes. Each participant could submit only one response. No performance tasks, experimental manipulations, or group assignments were involved, so the researchers' role was limited to distributing the survey link, monitoring response completeness, and ensuring that inclusion criteria were met.

The study variables comprised the total career planning score (Y) as the dependent variable and digital literacy (X_1) and career guidance (X_2) as independent variables, with all predictors measured rather than experimentally manipulated or assigned to groups. From an ethical perspective, participation was entirely voluntary, and respondents retained the right to skip questions or withdraw at any time without consequence. Consent was required to proceed, anonymity was maintained by removing personal identifiers, and all raw data were stored without names or IDs.

https://doi.org/10.24036/02026151164-0-86

Data Analysis

The data were analysed using multiple linear regression to examine the statistical relationships between digital literacy, career guidance, and students' career planning. This analysis aimed to identify the relative predictive contributions of each independent variable to the dependent variable, using cross-sectional survey data. All regression assumptions were tested and confirmed to be met before conducting the regression analysis.

Data analysis was performed using IBM SPSS Statistics. Prior to hypothesis testing, regression assumptions were assessed, including normality of residuals using a Normal P–P Plot, linearity of the relationship between predictor and criterion variables, multicollinearity using Tolerance and Variance Inflation Factor (VIF) values, and homoscedasticity by examining residual distribution patterns. Next, multiple linear regression was used to test the predictive relationship between digital literacy and career guidance and students' career planning. The predictive contribution of each independent variable was evaluated using a t-test, and the model fit was assessed using an F-test. The coefficient of determination (R^2) was reported to indicate the proportion of variance in career planning explained by the model.

RESULTS

Classical Assumption Test

Normality tests were conducted using the Kolmogorov–Smirnov method on the regression model residuals. The test yielded a significance value of 0.200 ($p > 0.05$), indicating that the residuals are normally distributed. Therefore, the normality assumption is fulfilled. Multicollinearity was assessed using tolerance and the Variance Inflation Factor (VIF). Both independent variables had a tolerance of 0.907 (> 0.10) and a VIF of 1.103 (< 10). These findings indicate no multicollinearity in the regression model, allowing all independent variables to be included simultaneously. Heteroscedasticity was assessed using residual scatterplot analysis and the Glejser test. The residual scatterplot showed no discernible pattern. Additionally, the Glejser test yielded significance values for digital literacy ($p = 0.936$) and career guidance ($p = 0.792$) greater than 0.05. Thus, the regression model does not exhibit heteroscedasticity and meets the homoscedasticity assumption.

Regression Coefficients

Table 1 shows that digital literacy has a regression coefficient of 0.412 ($\beta = 0.345$; $t = 4.980$; $p < 0.001$). This indicates that each one-unit increase in digital literacy is associated with a 0.412 increase in students' career planning score, assuming other variables are held constant. Career guidance also shows a positive regression coefficient of 0.278 ($\beta = 0.395$; $t = 5.696$; $p < 0.001$), suggesting that each one-unit increase in career guidance is associated with a 0.278 increase in students' career planning score, assuming other variables are held constant.

Table 1. Results of Multiple Linear Regression Test

Variable	Unstandardized	Standardized	t	p
Intercept	15.787	-	4.190	< 0,01
Digital Literacy	0.412	0.345	4.980	< .001
Career Guidance	0.278	0.395	5.696	<. 001

This study uses the multiple linear regression equation: $Y = a + b_1X_1 + b_2X_2$, where X_1 = Digital Literacy, X_2 = Career Guidance, and Y = Career Planning. Thus, the multiple regression equation is as follows: $Y = 15.787 + 0.412X_1 + 0.278X_2$. The constant 15.787 indicates that when digital literacy (X_1) and career guidance (X_2) are zero on the measurement scale, career planning (Y) is 15.787. This means that students already have a baseline career planning score of 15.787, even before considering digital literacy and career guidance. The regression coefficient of 0.412 indicates that each 1-unit increase in digital literacy (X_1) increases career planning (Y) by 0.412 points, assuming other variables remain constant. Therefore, the higher a student's digital literacy, the better their career planning skills. The

regression coefficient of 0.278 indicates that each 1-unit increase in career guidance (X_2) results in a 0.278-unit increase in career planning (Y), assuming other variables are constant. This demonstrates a positive relationship between career guidance and students' career planning.

DISCUSSION

Regression analysis revealed that digital literacy ($\beta = 0.412$, $p < 0.001$) and career guidance ($\beta = 0.278$, $p < 0.001$) are significantly and positively associated with students' career planning tendencies. These findings indicate that students with stronger digital competencies and greater engagement with career guidance services tend to adopt more structured career planning orientations. Both factors appear to play complementary roles, with digital literacy expanding access to and the scope of career-related information, while career guidance provides a reflective framework for interpreting and integrating this information into personal considerations. In the context of career exploration in the digital era, these results suggest that digital literacy functions as a cognitive capacity that supports students' reflective and critical engagement with career information, rather than serving as a sole determinant of career planning. In line with career construction theory and social cognitive career theory (Savickas, 2013), career guidance helps students identify their values, interests, and abilities, ensuring that complex career information is not merely accessible but meaningfully interpreted and purposefully integrated into the career planning process.

These findings are also consistent with previous studies demonstrating the link between digital competencies and processes of career exploration and career decision making (Kulcsár et al., 2020; Mohammadyari & Singh, 2015; van Laar et al., 2017). Prior empirical studies examining digital competencies in the context of career planning have predominantly focused on university student populations (Naufal, 2021). In contrast, reports and studies focusing on secondary school students indicate that career development at this educational level is often less effective, as reflected in students' confusion about how to effectively utilise digital information and technologies to shape their future career directions (Covacevich et al., 2021; OECD, 2024). In relation to this condition, the present study demonstrates that digital literacy and career guidance are positively associated with secondary school students' tendencies toward career planning.

The strength of this study lies in its ability to integrate digital literacy and career guidance as complementary factors in explaining students' career planning tendencies. Career planning cannot be understood through a single factor, but rather through the simultaneous relationship between students' digital skills and the reflective support provided by career guidance services. The findings of this study provide empirical support for the role of digital literacy as a cognitive capacity that facilitates students' reflective engagement with career information, and for career guidance as a mechanism that helps students interpret and internalise this information in a more structured career planning process.

These findings offer practical implications for the development of guidance and counseling services in secondary schools, particularly in responding to the dynamics of career planning in the digital era. The positive relationship between digital literacy and career planning suggests that strengthening students' digital skills can be considered for integration into career guidance programs, not only as a means of accessing information but also as a cognitive resource that supports career exploration and reflection. In this context, career guidance services act as facilitators, helping students interpret, evaluate, and integrate digital career information with their self-understanding, personal values, and future aspirations. An adaptive career guidance approach to technological developments, emphasising a balance between the use of digital information and a purposeful, reflective process, has the potential to support students' career planning more effectively.

However, this study has limitations that warrant consideration. The correlational design and use of self-report data limit the study's ability to explain the direction of relationships and the underlying dynamics among variables. Future research could consider using longitudinal or experimental designs to gain a deeper understanding of students' career planning development and the roles of digital literacy and career guidance in the context of changing technologies and educational services.

https://doi.org/10.24036/02026151164-0-86

CONCLUSION

This study demonstrates a significant positive association between digital literacy, career guidance, and secondary school students' tendencies towards career planning. The findings indicate that career planning is not the outcome of a single factor but a developmental process shaped by the interplay between students' personal capacity to manage digital information and the reflective support provided through career guidance services. In the context of secondary education in Indonesia, particularly in Baubau City, Southeast Sulawesi, this study provides additional empirical evidence on how these two factors operate simultaneously to shape students' career planning orientations in the digital era. Future research employing longitudinal designs or more diverse methodological approaches is recommended to deepen understanding of the dynamics of career planning and how digital capacity and career guidance interact across students' developmental trajectories.

ACKNOWLEDGEMENTS

We would like to express our gratitude to all high school students in Baubau City who volunteered to participate in this study, as well as the guidance and counselling teachers who facilitated the distribution of the questionnaires. This research was carried out independently without external funding, and the authors declare no conflicts of interest.

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