International Journal of Education, Vocational and Social Science
https://e-journal.citakonsulindo.or.id/index.php/IJEVSS
E-ISSN : 2963 4954
IJEVSS

The Effect of Collaboration, Creativity, and Student Learning Independence on Entrepreneurial Ability within the Eight Graduate Profile Dimensions Evidence from Grade XI Students at SMKN 6 Pangkep

Islamiyah Rasyid[1]
[1]Universitas Patompo, Makassar, Indonesia
Syarifuddin[2]
[2]Universitas Patompo, Makassar, Indonesia
Andi Arifuddin Iskandar[3]
[3]Universitas Patompo, Makassar, Indonesia

Corresponding Author: islamiyahrasyid55@guru.smk.belajar.id

Abstract

This study investigates the effects of collaboration, creativity, and student learning independence on entrepreneurial ability within the framework of the eight graduate profile dimensions among Grade XI students at SMKN 6 Pangkep. The study employed a quantitative ex post facto design involving the entire Grade XI population as the sample (n = 35), selected through saturated sampling. Primary data were collected through a Likert-scale questionnaire and analyzed using IBM SPSS Statistics 26. Instrument quality was confirmed through item validity testing and Cronbach alpha reliability testing. The regression assumptions were also examined through normality, multicollinearity, and heteroscedasticity tests. The findings show that collaboration has a positive and significant effect on entrepreneurial ability (B = 0.251, t = 2.269, p = 0.030), creativity also has a positive and significant effect (B = 0.441, t = 2.970, p = 0.006), and student learning independence has the strongest positive and significant effect (B = 0.516, t = 3.064, p = 0.004). Simultaneously, the three predictors significantly explain entrepreneurial ability (F = 23.584, p < 0.001), with R = 0.834 and R2 = 0.695. These results imply that vocational schools should strengthen collaborative learning, creative project development, and independent learning routines to improve students entrepreneurial readiness.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

Keywords: Collaboration; creativity; entrepreneurial ability; graduate profile dimensions; learning independence; vocational education.

INTRODUCTION

Vocational education is expected to produce graduates who are not only ready to enter employment but are also capable of creating economic opportunities through entrepreneurship. In the Indonesian vocational school context, entrepreneurial ability is particularly important because vocational students are trained through practical, production-oriented, and workplace-oriented learning activities. However, entrepreneurship education cannot be reduced to technical knowledge alone. It requires the development of attitudes, social skills, creative thinking, and self-directed learning habits that enable students to identify opportunities and transform ideas into productive action.

The current orientation of graduate competency in Indonesian education emphasizes a broader profile of student development. The eight graduate profile dimensions include faith and piety, citizenship, critical reasoning, creativity, collaboration, independence, health, and communication. For vocational schools, these dimensions are closely connected to work readiness and entrepreneurial readiness because students are expected to work productively, cooperate with others, communicate ideas, innovate within their field of expertise, and remain responsible for their own learning and performance.

Preliminary observations at SMKN 6 Pangkep during the 2024/2025 academic year indicated that many Grade XI students still tended to work individually, showed difficulty adapting to group tasks, and were reluctant to present creative ideas. In craft and entrepreneurship-related assignments, several products appeared monotonous and were produced mainly to fulfil assignment requirements rather than to demonstrate innovation. These conditions suggest that entrepreneurial ability may be associated with students collaboration, creativity, and independence in learning.

Collaboration is needed because entrepreneurial work often involves interaction, negotiation, division of roles, mutual support, and the ability to build networks. Creativity is equally essential because entrepreneurial activity depends on the generation of new ideas, problem-solving, product differentiation, and value creation. Learning independence is also central because students who can plan, monitor, and evaluate their own learning are more likely to take initiative, persist under difficulty, and develop confidence in entrepreneurial activities.

Although entrepreneurship education has been widely studied, empirical evidence

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

focusing on the combined influence of collaboration, creativity, and student learning independence within the frame of the eight graduate profile dimensions remains limited, especially in the vocational school context of SMKN 6 Pangkep. Therefore, this study aims to analyze: (1) the effect of collaboration on entrepreneurial ability; (2) the effect of creativity on entrepreneurial ability; (3) the effect of student learning independence on entrepreneurial ability; and (4) the simultaneous effect of the three predictors on entrepreneurial ability among Grade XI students at SMKN 6 Pangkep.

LITERATURE REVIEW AND HYPOTHESES

Entrepreneurial ability refers to a set of attitudes, competencies, and behavioral tendencies that enable individuals to identify opportunities, take calculated risks, develop ideas, and create value. In vocational education, entrepreneurial ability is relevant because students are prepared not only to become workers but also to become productive individuals who can initiate business activity in accordance with their fields of expertise. The indicators used in this study include courage and creativity, willingness to take risks, perseverance, accurate perception and analysis, non-consumptive orientation, leadership, and future orientation.

Collaboration is a learning and working process in which students plan together, consider different perspectives, participate in discussion, listen to others, and support group goals. Greenstein (2012) emphasizes that collaboration involves active contribution, productive work, flexibility and compromise, project management, responsibility, and respect. In entrepreneurship education, collaboration can help students exchange knowledge, refine ideas, distribute tasks, and develop products or solutions more effectively. Accordingly, the first hypothesis states that collaboration has a positive and significant effect on entrepreneurial ability.

Creativity is the ability to produce ideas, alternatives, or products that are new, useful, and relevant to a particular problem. In the learning process, creativity is reflected in curiosity, meaningful questioning, spontaneous expression of ideas, and the ability to work independently. For entrepreneurship, creativity provides the basis for innovation, product uniqueness, opportunity recognition, and problem-solving. Therefore, the second hypothesis states that creativity has a positive and significant effect on entrepreneurial ability.

Student learning independence refers to the capacity to take responsibility for learning processes and outcomes, initiate action, overcome learning obstacles, and complete tasks without excessive dependence on others. Independent learners are more likely to regulate their effort, evaluate their progress, make decisions, and develop confidence. Since entrepreneurship requires

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

initiative, resilience, and self-management, the third hypothesis states that student learning independence has a positive and significant effect on entrepreneurial ability.

The fourth hypothesis proposes that collaboration, creativity, and learning independence simultaneously have a positive and significant effect on entrepreneurial ability. The model assumes that entrepreneurial ability is not developed by a single factor, but through the integration of social interaction, innovative thinking, and self-regulated action.

Table 1. Research variables and indicators

Variable	Operational focus	Indicators used in the study
Collaboration (X1)	Ability to work with others to achieve shared learning and project goals.	Active contribution; productive work; flexibility and compromise; project management; respect; responsibility.
Creativity (X2)	Ability to generate useful ideas and express creative responses in learning activities.	Curiosity; meaningful questions; spontaneous expression of opinions; ability to work independently.
Student learning independence (X3)	Ability to take responsibility for the learning process and complete tasks with initiative.	Learning focus; self-influence; peer support; self/peer assessment; respect for individual differences.
Entrepreneurial ability (Y)	Ability and readiness to show entrepreneurial attitudes and behaviors.	Courage and creativity; risk-taking; perseverance; perception and analysis; non-consumptive orientation; leadership; future orientation.

Source: Adapted from the operational definitions in the research document.

METHOD

This study used a quantitative ex post facto design. The design was appropriate because the study examined the influence of existing independent variables - collaboration, creativity, and student learning independence - on entrepreneurial ability without manipulating the learning conditions. The research was conducted at SMK Negeri 6 Pangkep during the even semester of the 2025/2026 academic year, from January to March 2026.

The population comprised all Grade XI students at SMKN 6 Pangkep. Since the population

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

consisted of 35 students, the study used saturated sampling, meaning that the whole population was included as the sample. Data were collected using a questionnaire with a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Additional information was obtained through observation and literature study to support interpretation of the findings.

Data analysis was conducted using IBM SPSS Statistics 26. The analysis began with instrument validity testing using item-total correlation and reliability testing using Cronbach alpha. The regression assumptions were examined through the One-Sample Kolmogorov-Smirnov normality test, tolerance and variance inflation factor (VIF) for multicollinearity, and scatterplot inspection for heteroscedasticity. Hypotheses were tested using multiple linear regression, partial t-tests, simultaneous F-test, and coefficient of determination. The regression model was specified as: Y = a + b1X1 + b2X2 + b3X3 + e, where Y represents entrepreneurial ability, X1 collaboration, X2 creativity, and X3 student learning independence.

RESULTS

The results are presented in four parts: instrument quality, regression assumption testing, the multiple regression model, and hypothesis testing. The data were processed from the questionnaire responses of 35 Grade XI students.

Table 2. Instrument validity and reliability summary

Variable	No. of items	Item-total correlation range	r table	Cronbach alpha	Decision
Collaboration (X1)	6	0.619 - 0.931	0.329	0.918	Valid and reliable
Creativity (X2)	4	0.780 - 0.904	0.329	0.876	Valid and reliable
Student learning independence (X3)	4	0.817 - 0.868	0.329	0.867	Valid and reliable
Entrepreneurial ability (Y)	6	0.509 - 0.771	0.329	0.779	Valid and reliable

Note. Validity criterion: r count >= r table (0.329). Reliability criterion: Cronbach alpha > 0.60. Data processed with SPSS 26.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

All questionnaire items met the validity criterion because their item-total correlation coefficients exceeded the r-table value of 0.329. The reliability coefficients ranged from 0.779 to 0.918, indicating that all variables had acceptable to very high internal consistency.

Table 3. Regression assumption test summary

Assumption	Indicator	Result	Decision
Normality	Kolmogorov-Smirnov Asymp. Sig. (2-tailed)	0.200 for X1, X2, X3, and Y	Normal distribution
Multicollinearity	Tolerance / VIF for collaboration	0.576 / 1.736	No multicollinearity
Multicollinearity	Tolerance / VIF for creativity	0.758 / 1.319	No multicollinearity
Multicollinearity	Tolerance / VIF for learning independence	0.609 / 1.643	No multicollinearity
Heteroscedasticity	Scatterplot pattern	Points spread randomly above and below zero	No heteroscedasticity indication

Note. Normality was accepted because p > 0.05. Multicollinearity was rejected because tolerance > 0.10 and VIF < 10. Data processed with SPSS 26.

The classical assumption tests indicate that the regression model was appropriate for hypothesis testing. The Kolmogorov-Smirnov significance values were above 0.05, the tolerance and VIF values were within the accepted thresholds, and the scatterplot did not show a systematic pattern of unequal variance.

Table 4. Model summary and simultaneous test

R	R2	Adjusted R2	Std. error of estimate	Durbin-Watson	F	Sig.
0.834	0.695	0.666	2.64283	1.907	23.584	0.000

Note. Predictors: collaboration, creativity, and student learning independence. Dependent variable: entrepreneurial ability.

The model summary shows that the three predictors had a strong relationship with entrepreneurial ability (R = 0.834). The R2 value of 0.695 indicates that collaboration, creativity,

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

and student learning independence jointly explained 69.5% of the variance in entrepreneurial ability, while the remaining 30.5% was explained by factors outside the model. The F-test result was significant ($F = 23.584$, $p < 0.001$), confirming that the predictors simultaneously influenced entrepreneurial ability.

Table 5. Multiple regression coefficients and partial hypothesis testing

Predictor	B	Std. error	Standardized Beta	t	Sig.	Decision
Constant	0.695	2.139	-	0.325	0.747	-
Collaboration (X1)	0.251	0.111	0.296	2.269	0.030	Significant
Creativity (X2)	0.441	0.148	0.338	2.970	0.006	Significant
Student learning independence (X3)	0.516	0.169	0.389	3.064	0.004	Significant

Note. Dependent variable: entrepreneurial ability. Significance level: 0.05.

Based on the unstandardized coefficients, the regression equation is: entrepreneurial ability = 0.695 + 0.251(collaboration) + 0.441(creativity) + 0.516(student learning independence) + e. The partial tests show that each independent variable has a positive and significant effect on entrepreneurial ability. Student learning independence has the largest unstandardized coefficient (B = 0.516) and the largest standardized Beta (0.389), indicating that it is the most dominant predictor in this model.

DISCUSSION

The first finding shows that collaboration positively and significantly affects entrepreneurial ability. This result implies that students who contribute actively, work productively, compromise with peers, manage group tasks, respect others, and take responsibility are more likely to show stronger entrepreneurial ability. In the context of vocational learning, collaboration allows students to exchange ideas, distribute responsibilities, and learn from differences in perspective. These processes are important for entrepreneurship because business development often requires teamwork, networking, customer interaction, and cooperation with partners.

The second finding demonstrates that creativity has a positive and significant effect on entrepreneurial ability. Students who are curious, willing to ask meaningful questions, confident

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

in expressing ideas, and able to work independently are more likely to generate innovative entrepreneurial ideas. This finding supports the view that creativity is not merely an aesthetic ability but a practical competency for identifying opportunities, designing products or services, solving problems, and creating competitive value.

The third finding indicates that student learning independence is the strongest predictor of entrepreneurial ability. Independent learners can regulate their learning, take initiative, make decisions, and complete tasks with less dependence on external direction. These characteristics are highly relevant to entrepreneurship because entrepreneurial action requires persistence, self-confidence, self-management, and the willingness to take responsibility for outcomes. The dominance of learning independence in this study suggests that entrepreneurial programs at SMK should not only provide business knowledge but should also cultivate students autonomy in planning, implementing, and evaluating entrepreneurial projects.

The simultaneous effect of collaboration, creativity, and learning independence confirms that entrepreneurial ability develops through an integrated competency structure. Collaboration contributes the social dimension, creativity contributes the innovation dimension, and learning independence contributes the self-regulatory dimension. When the three dimensions are strengthened together, students are better prepared to develop entrepreneurial ideas, execute tasks, adapt to challenges, and demonstrate work-related competencies aligned with the eight graduate profile dimensions.

These findings have practical implications for vocational schools. Teachers should design project-based and production-based entrepreneurship learning activities that require students to work in teams, generate original ideas, and take responsibility for their own learning progress. Schools should also provide mentoring systems, entrepreneurship exhibitions, industry collaboration, and reflective assessment to strengthen students entrepreneurial readiness.

CONCLUSION

This study concludes that collaboration, creativity, and student learning independence each have a positive and significant effect on entrepreneurial ability among Grade XI students at SMKN 6 Pangkep. The three variables also have a significant simultaneous effect on entrepreneurial ability. The regression model explains 69.5% of the variance in entrepreneurial ability, indicating that the model has strong explanatory power. Among the predictors, student learning independence is the most dominant factor.

The findings suggest that SMKN 6 Pangkep and related educational stakeholders should

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

strengthen programs that develop collaborative learning, creative project work, and independent learning habits. Teachers of entrepreneurship-related subjects should guide students through project planning, product development, group reflection, and independent task completion. Students should also be encouraged to become more confident, innovative, responsible, and future-oriented in entrepreneurship learning.

FUTURE DIRECTIONS

Future research should involve a larger sample across several vocational schools to improve generalizability. Further studies may also add variables such as entrepreneurial self-efficacy, digital literacy, family support, access to business capital, and industry mentoring. Mixed-method research is recommended to capture not only statistical relationships but also students lived experiences in developing entrepreneurial projects. Longitudinal research would also help determine whether collaboration, creativity, and learning independence predict actual entrepreneurial behavior after graduation.

REFERENCES

Afif Nur Rahmadi, & Heryanto, B. (2016). Analisis faktor-faktor yang mempengaruhi minat berwirausaha pada mahasiswa Program Studi Manajemen Fakultas Ekonomi Universitas Kadiri. Jurnal Ekonomi Universitas Kadiri, 1(2), 153-169.

Arikunto, S. (2005). Metode penelitian kualitatif. Sagung Seto.

Barkley, E. F., Cross, K. P., & Major, C. H. (2014). Collaborative learning techniques: A handbook for college faculty. Jossey-Bass.

Desmita. (2016). Psikologi perkembangan peserta didik. Remaja Rosdakarya.

Fatimah, E. (2010). Psikologi perkembangan: Perkembangan peserta didik. Pustaka Setia.

Fazriyah, N. (2017). The effect of integrated learning model and critical thinking skill of science learning outcomes. Journal of Physics: Conference Series.

Ghozali, I. (2013). Aplikasi analisis multivariate dengan program IBM SPSS 21 update PLS regresi. Badan Penerbit Universitas Diponegoro.

Ghozali, I. (2017). Aplikasi analisis multivariate dengan program SPSS. Badan Penerbit Universitas Diponegoro.

Ghozali, I. (2019). Aplikasi analisis multivariate dengan program IBM SPSS 25. Badan Penerbit Universitas Diponegoro.

Greenstein, L. (2012). Assessing 21st century skills: A guide to evaluating mastery and authentic

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License

learning. Sage Publications.
Hamzah, B. U. (2010). Teori motivasi dan pengukurannya. Bumi Aksara.
Hidayati, K., & Listyani, E. (2010). Pengembangan instrumen kemandirian belajar mahasiswa. Jurnal Penelitian dan Evaluasi Pendidikan, 14(1), 83-100.
Indarti, N. (2008). Intensi kewirausahaan mahasiswa: Studi perbandingan antara Indonesia, Jepang dan Norwegia. Jurnal Ekonomika dan Bisnis Indonesia, 23(4), 1-27.
Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2025). Peraturan Menteri Pendidikan, Kebudayaan, Riset, dan Teknologi Nomor 10 Tahun 2025 tentang Standar Kompetensi Lulusan. Kemendikbudristek.
Khamimah, W. (2021). Peran kewirausahaan dalam memajukan perekonomian Indonesia. Jurnal Disrupsi Bisnis, 4(3), 228-240.
Kristin, F. (2016). Penerapan model pembelajaran discovery learning untuk meningkatkan kemampuan berpikir kreatif dan hasil belajar siswa. Perspektif Ilmu Pendidikan, 71.
Meredith, G. G., Nelson, R. E., & Neck, P. A. (1992). Kewirausahaan: Teori dan praktek. Pustaka Binaman Pressindo.
Murawsky, W. W. (2010). Collaborative teaching in elementary school. Corwin.
Mutis, T. (1995). Kewirausahaan yang berproses. Grasindo.
Rahmawati, A., Fadiawati, N., & Diawati, C. (2019). Analisis keterampilan berkolaborasi siswa SMA pada pembelajaran berbasis proyek daur ulang minyak jelantah. Jurnal Pendidikan dan Pembelajaran Kimia, 8(2), 430-443.
Riduwan. (2005). Belajar mudah penelitian untuk guru-karyawan dan peneliti pemula. Alfabeta.
Slameto. (2010). Belajar dan faktor-faktor yang mempengaruhinya. Rineka Cipta.
Sugiyono. (2014). Metode penelitian pendidikan: Pendekatan kuantitatif, kualitatif, dan R&D. Alfabeta.
Sugiyono. (2019). Metode penelitian kuantitatif, kualitatif, dan R&D. Alfabeta.
Suliyanto. (2011). Ekonometrika terapan: Teori dan aplikasi dengan SPSS. ANDI.
Umar, D. H. (2012). Pelatihan metodologi penelitian. Modul.
Widarto. (2013). Penelitian ex post facto. Fakultas Teknik Universitas Negeri Yogyakarta.
Woolfolk, A. (2007). Educational psychology (10th ed.). Pearson Education.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-Share Alike 4.0 International License