

The Influence of Vocational Life Skills Learning Models on Enhancing Entrepreneurial Skills of Students with Hearing Impairments

Catur Budi Santosa¹, Siswandari^{2*}, Bandi³, Gunarhadi⁴

Doctor of Economic Education, Faculty of Teacher Training and Education,
Universitas Sebelas Maret, Indonesia

Corresponding Author: Siswandari siswandari@staff.uns.ac.id

ARTICLE INFO

Keywords: Vocational Life Skills, Learning Model, Entrepreneurial Skills, Hearing Impairments

Received: 6, October

Revised: 24, October

Accepted: 25, November

©2025 Santosa, Siswandari, Bandi, Gunarhadi: This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by-sa/4.0/).



ABSTRACT

This study investigates the effect of the Vocational Life Skills Learning Model (VLSLM) in enhancing entrepreneurial skills among deaf students. Using a pretest-posttest control group experimental design, this study involved 20 students from a special high school for deaf students in the Surakarta area. The data were analyzed using descriptive statistics and a paired sample t-test. The results of this study indicate that VLSLM has a significant and positive effect on improving entrepreneurial skills among students with hearing impairments. The findings suggest that the integration of life skills, experiential learning, and adaptive communication strategies effectively enhances entrepreneurial readiness among students with hearing impairments. This study provides theoretical contributions by extending the entrepreneurial learning framework into an inclusive context. It offers practical implications for curriculum reform, teacher training, and policy formulation in education for students with disabilities.

INTRODUCTION

Vocational education is an important pathway in preparing individuals to become productive and independent members of society. This education equips learners with practical and adaptive skills needed to participate meaningfully in the workforce and contribute to sustainable economic development (Jafarov, 2025). However, the effective implementation of vocational education remains a challenge for students with disabilities, especially those who are hearing impaired (Bari et al., 2013). Barriers such as limited communication access, inadequate teaching materials, and a shortage of trained instructors hinder their ability to acquire relevant life and job skills. As a result, students with hearing impairments often face limited job opportunities and a greater dependence on social welfare systems (World Health Organization, 2021). According to the International Labour Organization (2024), people with disabilities continue to experience significantly higher levels of unemployment and unequal employment compared to their non-disabled peers. This situation highlights the urgent need for inclusive pedagogical innovations that not only develop technical skills but also nurture entrepreneurial competencies that are essential for economic independence (Ezeonwumelu et al., 2025).

The central government, local governments, and State-Owned Enterprises (SOEs) are required to employ at least two percent of workers with disabilities, while the private sector must use at least one percent. However, despite existing regulations, the latest data from BPS in 2023 shows that the number of workers with disabilities remains low, reaching only 763,925 people or 0.55 percent of the total national workforce. This figure has slightly increased compared to 2022, which was 720,748 or 0.53 percent. However, that number is still far from expectations. Most people with disabilities work in the informal sector, with many becoming entrepreneurs. The agricultural sector is the main employer of workers with disabilities, reflecting the limited opportunities in the formal sector and industry.

This fact illustrates that the proportion of disabilities in the workforce is still very small. The agricultural and rural sectors still absorb a significant number of disabled workers, reflecting the disparity in the urban industrial sector, which should ideally offer greater opportunities for inclusive accessibility for people with disabilities. The Working-Age Population (WAP) with disabilities in Indonesia reaches 5.17 million people, with the disabled labor force totaling 1.04 million people. The Labor Force Participation Rate (LFPR) for people with disabilities has only reached 20.14%, and the Open Unemployment Rate (OUR) for people with disabilities is 10.8% (Badan Pusat Statistik, 2024). According to data from Dapodik, the number of special needs school students across Indonesia is 149,969, with 25,415 being deaf students. Only 25.6% of the deaf individuals are employed, while 74.4% are unemployed, with the largest occupations being farmers (39.9%) and laborers (32.1%), and only 8.5% of deaf people are traders or entrepreneurs (Halimatussadiah, 2017).

In the context of global education reform, entrepreneurship has emerged as a strategic means to promote inclusion and reduce economic disparities among marginalized groups, including individuals with special needs (OECD, 2016).

However, special education curricula often remain focused on routine or manual skills, with limited emphasis on the development of creativity, innovation, and problem-solving—the hallmarks of entrepreneurial capacity (Isac et al., 2023). Traditional approaches tend to prioritize repetition and task completion over inquiry- or experience-based learning processes that nurture higher-order thinking skills. For students with hearing impairments, these pedagogical limitations are compounded by linguistic and social challenges that hinder access to entrepreneurship-oriented content (Marschark & Hauser, 2011). As a result, they may graduate with technical skills but lack the life skills and entrepreneurial mindset necessary to start or manage a business venture effectively (Fawaid et al., 2022). Addressing this issue requires an educational model that integrates life skills, adaptive communication strategies, and experiential learning principles tailored to the unique learning profiles of students with hearing impairments (Jaya et al., 2018).

LITERATURE REVIEW

The main issue underlying this research lies in the limited empirical evidence regarding the effectiveness of vocational life skills learning models in enhancing entrepreneurial skills among students with hearing impairments. Although some studies have examined entrepreneurship education for general or inclusive classes (Smith et al., 2017; Fitria et al., 2025), few have investigated how life skills-oriented pedagogy affects the entrepreneurial development of students with sensory impairments. Most existing models overlook the cognitive and communication adaptations required for deaf learners, resulting in low transfer of learning from classroom activities to real-life entrepreneurial contexts (Vera et al., 2024; Fitria et al., 2025). As a result, the development of creative thinking, self-efficacy, and problem-solving among deaf students remains inadequate, limiting their ability to engage in entrepreneurship or small business creation (Mahfud et al., 2020). This gap underscores the urgency of developing and empirically validating an inclusive learning model that effectively links vocational education with the development of entrepreneurial skills for this population.

Theoretically, this study is based on Social Learning Theory (Bandura, 1986), which emphasizes that learning occurs through observation, imitation, and modeling, and Kolb's Experiential Learning Theory (Kolb, 2015), which posits that knowledge is created through the transformation of experience. These theories together explain how vocational life skills learning—through activities that are experiential, reflective, and collaborative—can cultivate entrepreneurial competencies such as creativity, initiative, and decision-making. Empirical research has supported the idea that life skills-based learning has a positive impact on students' independence, resilience, and entrepreneurial intentions (Kirchhoff & Keller, 2021; Mahfud et al., 2020). However, there is a research gap regarding how these models are contextualized for learners with hearing impairments, especially within the framework of entrepreneurship education. Previous studies have largely overlooked the intersection between special education and entrepreneurship development, resulting in few adaptive

teaching strategies tailored to the needs of deaf students (Smith et al., 2017; Jusmirad et al., 2023).

The novelty of this research lies in its focus on examining the impact of a vocational life skills learning model specifically designed for students with hearing impairments in enhancing their entrepreneurial skills. Unlike previous studies that discussed life skills or entrepreneurship separately, this research integrates both dimensions through a model that emphasizes experiential learning, communication adaptation, and social participation. The findings of this study are expected to provide empirical evidence on how life skills-based learning contributes to the enhancement of entrepreneurial skills among students with hearing impairments. Therefore, the purpose of this study is to analyze the effect of the vocational life skills learning model on improving entrepreneurial skills—including cognitive skills, technical skills, and soft skills—among students with hearing impairments. Ultimately, this study aims to contribute to inclusive education policies and practices by promoting pedagogical innovations that empower students with disabilities to become active participants in the entrepreneurial economy.

METHODOLOGY

This study uses a quantitative experimental design with a pretest–posttest experimental group approach to examine the effect of the vocational life skills learning model in enhancing entrepreneurial skills in students with hearing impairments. This design was chosen because it allows for the measurement of changes in the level of entrepreneurial skills before and after the intervention, while considering the ethical and practical aspects typical in a special education setting (Creswell & Creswell, 2018). The use of this design enables a comparative analysis to determine the effectiveness and significance of the treatment.

This study involved students with hearing impairments at special needs high schools in the Surakarta region. Purposive sampling was applied to ensure the inclusion of schools with similar characteristics in terms of curriculum, student demographics, and teacher qualifications. The total sample included 20 students who were given treatment. Teachers and interpreters also participated indirectly to facilitate learning and ensure accessibility.

Data were collected using pretest and posttest instruments. These instruments consist of 30 questions measuring three main indicators, namely cognitive skills, technical skills, and soft skills. The content validity of the instruments was verified through expert assessment involving six education and entrepreneurship specialists using Aiken's *V*, with all items achieving values above 0.80, indicating high validity. Reliability testing was conducted using inter-rater reliability, measured with the Intraclass Correlation Coefficient (ICC) among three observers, showing a high reliability index (ICC = 0.91, $p < 0.01$).

RESEARCH RESULT

Before testing effectiveness, descriptive statistics were used to summarize the students' entrepreneurial skills scores. Table 1 presents the average pretest and posttest scores for the three indicators, namely cognitive skills, technical skills, and soft skills.

Table 1. Descriptive Statistics of Entrepreneurial Skills Scores

Value	Indicator		
	Cognitive Skills	Technical Skills	Soft Skills
Pretest Mean	26,5	27,5	32
Posttest Mean	56	70	89
Mean Difference	29,5	42,5	57

As shown in Table 2, both values show an increase between the pretest and posttest phases. The cognitive skills indicator increased by 29.5, technical skills by 42.5, and soft skills by 57. These results initially indicate that the Vocational Life Skills Learning Model contributes positively to the improvement of entrepreneurial skills among students with hearing impairments.

The next step involves statistical testing using a paired sample t-test to assess the differences in pretest and posttest scores.

Table 2. Paired Sample t-test Results

Indicator	df	Sig. (2-tailed)	Interpretation
Cognitive Skills	19	0.000	Significant
Technical Skills	19	0.000	Significant
Soft Skills	19	0.000	Significant

All three indicators showed a significant increase from the pretest to the posttest ($p < 0.05$). These results indicate that there is a substantial difference in students' entrepreneurial skills between the pretest and posttest data.

DISCUSSION

This finding provides strong empirical evidence that the Vocational Life Skills Learning Model effectively enhances entrepreneurial skills among students with hearing impairments. The significant average improvement and large effect size suggest that integrating life skills, experiential learning, and contextual problem-solving into vocational education can significantly enhance key aspects of entrepreneurial competence. These results are consistent with Kolb (2015)

Experiential Learning Theory, which emphasizes that learning becomes meaningful when students are actively engaged in a cycle of experience, reflection, conceptualization, and experimentation.

The observed improvements also support Bandura (1986) view, which suggests that modeling and guided observation play a crucial role in the acquisition of behavioral competence. For students with hearing impairments, visual modeling, peer collaboration, and teacher demonstrations act as accessible mediators for conceptual learning. The use of visually-based teaching materials and sign language-supported communication makes entrepreneurial concepts easier to understand, thereby enhancing self-efficacy and motivation to learn. Empirically, these findings are consistent with studies by Mahfud et al. (2020), which found that integrating life skills learning into the vocational curriculum promotes creativity, innovation, and the recognition of key entrepreneurial opportunity dimensions. Similarly, Jusmirad et al. (2023) emphasize that students with special needs significantly benefit from a contextual learning model that aligns with their personal strengths and communicative abilities.

Moreover, the high level of reliability and observed fidelity of implementation in the Vocational Life Skills Learning Model checklist affirms that the consistent application of structured and inclusive teaching strategies yields measurable improvements. This reinforces the idea proposed by Johnmark et al. (2016) that inclusive vocational pedagogy, which emphasizes real-world projects and skill transfer, is crucial for empowering students with disabilities to pursue self-employment or small business ventures (Tiasakul & Abdulzاهر, 2024).

This study expands life skills education and the entrepreneurial learning framework into the field of inclusive education. It validates that experiential learning and adaptive communication can coexist synergistically to promote entrepreneurial development among marginalized learners (Ezeonwumelu et al., 2025). These findings bridge gaps in the existing literature, where most entrepreneurial learning models are designed for regular students, thereby overlooking accessibility and communication diversity for students with disabilities, and the importance of developing an inclusive vocational training curriculum that integrates entrepreneurial competencies with real-world practice. Teachers who instruct students with hearing impairments are encouraged to use visual learning media, project collaboration with the assistance of sign language, and reflective assessment to enhance understanding and confidence.

Although this study presents strong findings, there are several limitations. The sample size is relatively small and limited to special schools in certain areas for deaf people, which may restrict generalizability. Future research should employ a longitudinal design to measure sustained entrepreneurial behavior after graduation and expand the sample across various special education contexts. Additionally, follow-up qualitative interviews could provide deeper insights into students' learning experiences and changes in motivation during the implementation of the model.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that the vocational life skills learning model has a significant and positive effect on improving entrepreneurial skills among students with hearing impairments. Empirical findings from a pretest-posttest experimental group design, supported by paired sample t-test analysis, indicate that this model effectively enhances students' cognitive skills, technical skills, and soft skills. The results show a large effect size, confirming that structured experiential learning and the integration of life skills substantially contribute to students' entrepreneurial readiness. The Vocational Life Skills Learning Model provides a strong educational innovation capable of transforming the landscape of inclusive education.

ADVANCED RESEARCH

This study advances existing scholarship by providing empirical evidence that a structured Vocational Life Skills Learning Model can significantly strengthen entrepreneurial competence among students with hearing impairments—an area that remains underdeveloped in inclusive education research. Unlike previous studies that focus mainly on cognitive outcomes, this research demonstrates how experiential, life-skills-based instruction simultaneously enhances cognitive, technical, and soft skills, producing a large effect size that validates its transformative potential. By integrating vocational training with adaptive pedagogical strategies tailored to students' sensory needs, the study introduces a comprehensive framework that bridges special education and entrepreneurship education. These findings contribute to theoretical advancements in inclusive pedagogy, highlight the importance of differentiated experiential learning, and offer a scalable model for institutions seeking to improve the entrepreneurial readiness and long-term independence of learners with disabilities.

REFERENCES

- Badan Pusat Statistik. (2024). *Keadaan Angkatan Kerja di Indonesia Agustus 2024*. Jakarta: Badan Pusat Statistik.
<https://www.bps.go.id/id/publication/2024/12/09/6f1fd1036968c8a28e4cfe26/keadaan-angkatan-kerja-di-indonesia-agustus-2024.html>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall, Inc.
- Bari, S., Hanafi, M., & Yasin, M. (2013). School-to-work for hearing impaired students. *International Journal of Education and Research*, 1(7), 1–12.
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches Fifth Edition*. London: SAGE Publications India Pvt. Ltd.

- Ezeonwumelu, V. U., Offor, U. I., Nwikpo, M. N., & Onunkwo, C. M. (2025). Promoting Inclusive Education to Boost Entrepreneurial Intentions: A Catalyst for Attainment of Sustainable Development Goals. *European Journal of Contemporary Education and E-Learning*, 3(1), 65–76. [https://doi.org/10.59324/ejceel.2025.3\(1\).06](https://doi.org/10.59324/ejceel.2025.3(1).06)
- Fawaid, M., Triyono, M. B., Sofyan, H., Mutohhari, F., Jatmoko, D., & Majid, N. W. A. (2022). Entrepreneurial Intentions of Vocational Education Students in Indonesia: PLS-SEM Approach. *Journal of Technical Education and Training*, 14(2). <https://doi.org/10.30880/jtet.2022.14.02.009>
- Fitria, A. W., Romansyah, & Wahira. (2025). Building Entrepreneurial Values in Inclusive Education in Early Childhood Schools. *EduLine: Journal of Education and Learning Innovation*, 5(1), 21–29. <https://doi.org/10.35877/454RI.eduline3427>
- Halimatussadiah, A. (2017). Mapping Persons with Disabilities (PWDs) in Indonesia Labor Market. *Economics and Finance in Indonesia*, 63(2). <https://doi.org/10.47291/efi.v63i2.572>
- International Labour Organization. (2024). *ILO Disability Inclusion Strategy (2024-2027)*. Geneva: International Labour Organization.
- Isac, C., Iordache, A. M. M., Baltador, L., Coculescu, C., & Nit, D. (2023). Enhancing Students' Entrepreneurial Competencies through Extracurricular Activities – A Pragmatic Approach to Sustainability-Oriented Higher Education. *Sustainability*, 15, 8708. <https://doi.org/10.3390/su15118708>
- Jafarov, S. (2025). Education and Skill Development: A Pathway to Sustainable Growth. *International Journal of Scientific Research and Management*, 13(02), 3963–3969. <https://doi.org/10.18535/ijssrm/v13i02.el06>
- Jaya, H., Haryoko, S., Saharuddin, Suhaeb, S., Sabran, & Mantasia. (2018). Life Skills Education for Children with Special Needs in order to Facilitate Vocational Skills. *Journal of Physics: Conference Series*, 1028.
- Johnmark, D. R., Soemunti, T. W., Laura, O., & Munene, J. C. (2016). Disabled students' entrepreneurial action: The role of religious beliefs. *Cogent*

- Business & Management*, 3, 1252549.
<https://doi.org/10.1080/23311975.2016.1252549>
- Jusmirad, M., Khibran, M. F., & Sarah, Y. (2023). Life Skills Education for Students with Special Needs to Improve Independence and Skills in Daily Life at UPT SLBN 2 Makassar. *Jurnal Pengabdian Masyarakat Bestari*, 2(5), 387–396.
<https://doi.org/10.55927/jpmb.v2i5.4181>
- Kirchhoff, E., & Keller, R. (2021). Age-Specific Life Skills Education in School: A Systematic Review. *Frontiers in Education*, 6, 1–15.
<https://doi.org/10.3389/feduc.2021.660878>
- Kolb, D. A. (2015). *Experiential learning: experience as the source of learning and development*. New Jersey: Pearson Education.
- Mahfud, T., Bruri, M., Sudira, P., & Mulyani, Y. (2020). The influence of social capital and entrepreneurial attitude orientation on entrepreneurial intentions : the mediating role of psychological capital. *European Research on Management and Business Economics*, 26(1), 33–39.
<https://doi.org/10.1016/j.iedeen.2019.12.005>
- Marschark, M., & Hauser, P. (2011). *How deaf children learn: What parents and teachers need to know*. Oxford University Press.
- OECD. (2016). *Inclusive Business Creation: Good Practice Compendium*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264251496-en>
- Organization, W. H. (2021). *World report on hearing*. Geneva: World Health Organization.
- Smith, A. M. J., Jones, D., Scott, B., & Stadler, A. (2017). Designing and Delivering Inclusive and Accessible Entrepreneurship Education. *Entrepreneurship Education*, 335–357. <https://doi.org/10.1108/S2040-7246201700000007019>
- Tiasakul, S., & Abdulzaher, R. (2024). Accessibility of Entrepreneurship Training Programs for Individuals with Disabilities: A Literature Review. *Administrative Sciences*, 14, 187. <https://doi.org/10.3390/admsci14080187>
- Vera, K. J., Urribarri, A. C., Velita, J. J. A., Illa, G. P., & Chirinos, A. A. N. (2024). Influence of the development of entrepreneurial skills on the confidence to undertake in university students. *Journal of Infrastructure, Policy and*

Development, 8(9), 1-18. <https://doi.org/10.24294/jipd.v8i9.6463>