
Vocational Entrepreneurship Education in the Digital Technology Era

Nandan Supriatna* and Sultono

Indonesian Education University

*Corresponding author. Email: nandan@upi.edu

ABSTRACT

Research on entrepreneurship/entrepreneur education has been carried out by many previous researchers in reputable journals, as well as on vocational education, therefore it is necessary to know in depth how entrepreneurship develops in the vocational field. This study discusses the extent to which studies discussing entrepreneurship education are related to the vocational field. This study aims to determine the objectives, methods and results of studies that have been conducted by previous researchers on entrepreneur/ entrepreneurship education in the vocational field of the digital technology era. The method used in this study uses a Systematic Literature Review (SLR), data obtained from mining meta data on Scopus with keywords according to the title.

Keywords: *Entrepreneurship Education, Digital Technology, Vocational.*

1. INTRODUCTION

Vocational education gives students skills in various fields. The provision of these skills is expected to be able to fulfill a qualified workforce both in soft skills and hard skills. In addition to the provision of skills, students must also be given knowledge in the field of entrepreneurship so that they can create independent jobs and absorb as many workers as possible. The entrepreneurial spirit must be attached to vocational education because vocational education participants have been given skills, from the skills they have acquired when they have entrepreneurial knowledge, they can bridge the business opportunities needed in the surrounding community. In line with research conducted by Londono et al., testing the goal-directed behavior (MGB) model in predicting high school students' entrepreneurial intentions, the research results encourage the study of entrepreneurship from a young age and the importance of teaching how to overcome negative emotions in the entrepreneurial process [1].

According to data from the Central Statistics Agency in February 2021 the working age population totaled 205.36 million people, the Open Unemployment Rate (TPT) in a survey conducted by BPS, namely in February 2020 amounted to 4.94%, in August 2020 7.07% and in February 2021 it was 6.26 [2]. From these data it is clear that in Indonesia the number of unemployed is still relatively high. The number of unemployed will be

absorbed if the economic conditions of a nation experience growth, one indicator of economic growth is the creation of jobs created by entrepreneurs. For this reason, there is a need for synergy between educational institutions and the business world and industry, in line with research results according to Secundo et al., his research found the framework presented is based on a collaborative entrepreneurship learning process to carry out relevant entrepreneurial projects in knowledge-intensive companies, this framework provides a coherent and systematic approach to generating, selecting, and implementing entrepreneurial practices in incumbent companies starting from project competencies involving creative students and innovative entrepreneurs, as well as Van Horne et al., in his research findings on methods innovative teaching to combine entrepreneurship and the creative economy [3-4].

The development of research conducted by researchers on entrepreneurship has been widely carried out in various fields, both conducted by companies and educational and research institutions. The objectives and results of research on entrepreneurship vary, such as examining issues of influence, strategy, effectiveness related to entrepreneurship as well as the various areas of entrepreneurship studied, such as engineering, textiles, arts, tourism, construction and others. As according to Syam et al., the results of his research found that there was a significant positive influence between being a business actor on the entrepreneurial motivation of

students at Makasar State University [5]. According to Soeharso & Riyanti, 2021 in research related to the intention to become an entrepreneur for SMK graduates in Indonesia, the results of the study found that entrepreneurship learning has a significant influence on entrepreneurial attitudes, subjective norms, and perceived behavioral control [6]. From the results of a review of articles on entrepreneurship in countries such as Vietnam, Malaysia, Nigeria, China, Zimbabwe and Indonesia, it shows that the government encourages people to take on the role of being entrepreneurs because they are believed to be able to reduce the number of unemployed in these countries or not depend on employment opportunities which are still limited. To get solutions to entrepreneurship problems in the education area, research related to learning emerged such as that conducted by Ncube & Lekhanya whose research evaluated the effectiveness of entrepreneurship education in South African higher education institutions with the aim of testing the competencies needed to successfully start a business, the results the evaluation of his research stated that there must be a new approach in pedagogy, namely adapting to changes in the business environment that occur within the country [7]. In addition to teaching success in entrepreneurship education, of course it needs to be supported by the ability of a teacher/lecturer in learning and teaching activities, especially the use of learning strategies according to Ardianti et al., research on factors that influence entrepreneurial intentions among lecturers at the Department of Economics and Business of the Vocational School UGM, the results show that the need for achievement, self-efficacy, and instrumental readiness all have a positive effect on entrepreneurial intentions [8]. According to Sudarmiati et al., the results of his research show that the key to successful entrepreneurship learning lies in teacher innovation and creativity, especially in the use of learning strategies [9].

Even though a lot of research on entrepreneurship has been carried out, the development of the times continues to change dynamically, so that these changes require more aligned solutions and innovations, especially in terms of entrepreneurship. As explained in the paragraph above, there has been a lot of research on entrepreneurship, therefore it is important to do an in-depth review of the content contained in quality research that has been published. In this literature review study research will discuss or review the main elements of previous studies, namely the trend of research results. The results of the discussion become a reference for knowing the development of entrepreneurship education that has been researched and published.

2. METHOD

Identification of data sources through searching the Scopus meta data database, mining was carried out on

November 30, 2021. The number of articles with the keyword "Entrepreneur" alone with no restrictions is 49,546 articles (books, journals, proceedings etc.). Then the mining keyword is given additional words, namely entrepreneur, learning, vocational and college in the form of only journal papers in 2017-2021, so 60 journal articles are obtained.

The strategy used is to search through data from Scopus with the keywords "entrepreneur, learning, vocational and college" with years of publication limited to 2017-2021 (TITLE-ABS-KEY (entrepreneur) AND TITLE-ABS-KEY (learning) AND TITLE -ABS-KEY (vocational OR college)) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT- TO (PUBYEAR , 2017)) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j")).

The method used is to use articles in international journals. Year of published articles from 2017 – 2021. Ensure that the selected articles are in English. Ensure that the selected articles are open access articles. The article used is about entrepreneur learning in the vocational field.

3. RESULTS

3.1. Publications Trends

The development trend of publications in the fields of education and entrepreneurship has increased quite significantly (figure 1). Bibliometric analysis is very useful for tracking theoretical developments and research streams [10]. From the number of previous articles without being limited by year and type of article, the number of articles obtained is 12,237. After being given restrictions in searching meta data with the category of journal articles, the last 5 years and the selected language, only articles in English, the number of articles was 1,642. The data shows that every year there is an increase in the number of published articles related to the theme of Education and entrepreneurship only in 2022 because it is still ongoing so the number of articles is still below the previous year, the percentage increase in 2017 - 2018 was 18.18%, 2018-2019 as much as 26.69%, in 2019-2020 as much as 17.60% and in 2020-2021 as much as 37.54%, the percentage in 2021-2022 has not been analyzed because in 2022 it is still running. From the results, the highest percentage increase occurred in the period 2020–2021.

Future entrepreneurship research is in a crossroads position between sustainable entrepreneurship research, social entrepreneurship and conventional entrepreneurship [11]. In line with the public perception that there are few deals with digital businesses that are easier to build compared to traditional businesses [12].

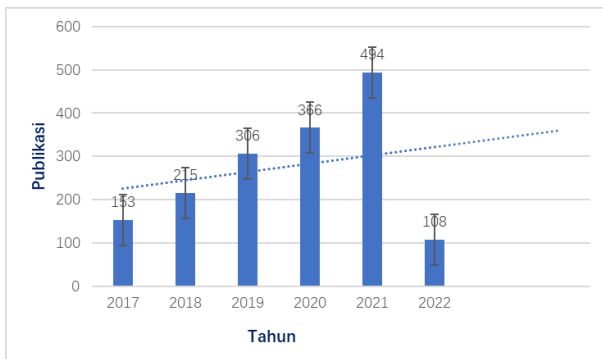


Figure 1. Quantitative distribution of education and entrepreneurship study publications 2017-2022

3.2. Main journal publishing

Research on entrepreneurship education has been published in many international journals. Proving that research related to entrepreneurship education is a global issue that is still hot. Figure 1 shows the ranking of the top 20 most productive journals that publish many articles on topics related to the period 2017 - 2022. The top position is occupied by the journal Sustainability with a total of 138 documents. Furthermore, the second rank is occupied by the journal Frontiers in Psychology with a total of 106 published documents. Then the third and fourth ranks are occupied by Industry and Higher Education journals (38 articles) and Education and Training journals (37 articles). Other journals that have contributed to entrepreneurship education research include International Journal of Entrepreneurial Behavior (26 articles), Administrative Sciences Journal (24 articles), Education Sciences Journal (20 articles), Entrepreneurship and Sustainability Issues and Journal of Small Business and Enterprise Development. has the same number of 18 articles, Universal Journal of Educational Research (17 Articles), International Journal of Management Education and Journal of Innovation and Entrepreneurship has the same number of 16 articles, Entrepreneurial Business and Economics Review and International Journal of Emerging Technologies also has the same number same 15 articles, Sage Open/Small Business Economics/Studies in Higher Education has 14 articles, Eurasia Journal of Mathematics Science and Technology/Journal of Technology Transfer has 13 articles, most recently Heliyon Journal has 12 articles. From these data the number that has the highest number in the first and second place, from rank three to rank two, the difference in number is not much.

Topic trends related to entrepreneurship education research for 2017-2021, in Figure 2, the latest trends for 2021 are the topics of covid 19, social innovation, Fuzzy-set qualitative comparative analysis (fsqca),

entrepreneurial culture, and digital entrepreneurship. Next is the trend in 2020 regarding the topic of entrepreneurship, entrepreneurship education, entrepreneurial intention, and higher education. Furthermore, in 2019 the topic trends that occurred were human capital, training, entrepreneurial learning, entrepreneurship, engineering education. After that, the trend occurred in 2018 regarding technology transfer, enterprise, theory of planned behavior, development and active learning. The last trend in 2017 was only one topic, namely the labor market. Especially regarding digital technology has brought many benefits to organizations such as centralization, access to new markets, and transparency, which is possible remotely only due to the use of digital technology in business operations [13]. The topic of entrepreneurial culture discussed in research on sustainable entrepreneurial competence is a significant factor that can explain entrepreneurial intentions, then perceived behavioral control moderates the relationship between sustainable entrepreneurial competence and entrepreneurial intentions, and the effect of sustainable entrepreneurial competence decreases if perceived behavioral control increases [14].

4. CONCLUSION

It is hoped that research related to entrepreneurship education will continue to improve for the quality of education in this digital technology era. The data shows that every year there is an increase in the number of published articles related to the theme of Education and entrepreneurship only in 2022 because it is still ongoing so the number of articles is still below the previous year, the percentage increase in 2017 - 2018 was 18.18%, 2018-2019 as much as 26.69%, in 2019-2020 as much as 17.60% and in 2020-2021 as much as 37.54%, the percentage in 2021-2022 has not been analyzed because in 2022 it is still running. From the results, the highest percentage increase occurred in the 2020–2021 period.

It can be seen in this research study, the relationship between entrepreneur education is related to various terms. The latest trends in terms related to entrepreneurship education are on the topic of covid 19, social innovation, Fuzzy-set qualitative comparative analysis (fsqca), entrepreneurial culture, and digital entrepreneurship. For the entrepreneurial theme related to vocational, the meta data obtained in 2017 – 2021 does not include trends in the meta data obtained. This research can be useful for finding research gaps regarding the development or implementation of entrepreneurship education to improve the quality of education and the business world in general.

Trend Topics

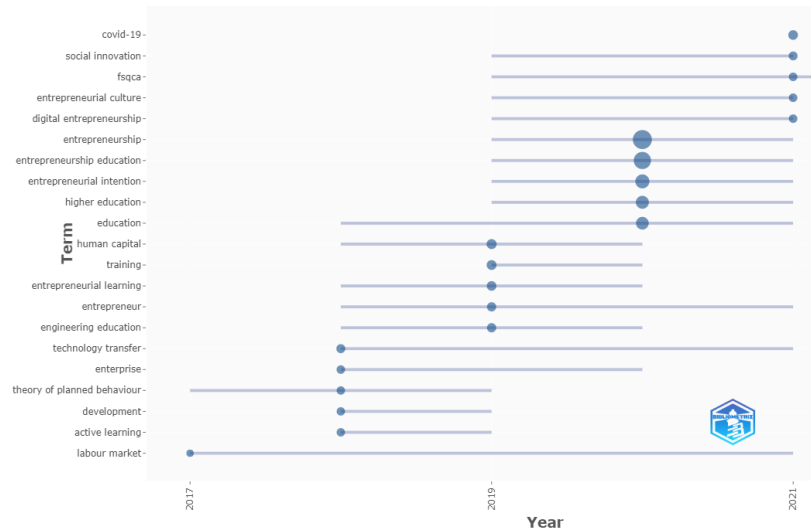


Figure 2. Topic trends related to entrepreneurship education research 2017-2021 years

REFERENCES

- [1] Londono, J. C., Wilson, B., & Osorio-Tinoco, F. (2020). Understanding the entrepreneurial intentions of youth: a PLS multi-group and FIMIX analysis using the model of goal-directed behavior. *Journal of Entrepreneurship in Emerging Economies*, 13(3), 301–326. <https://doi.org/10.1108/JEEE-07-2019-0090>
- [2] BPS. (2020). *Statistik Karakteristik Usaha 2020 1*.
- [3] Secundo, G., Del Vecchio, P., Schiuma, G., & Passiante, G. (2017). Activating entrepreneurial learning processes for transforming university students' idea into entrepreneurial practices. *International Journal of Entrepreneurial Behaviour and Research*, 23(3), 465–485. <https://doi.org/10.1108/IJEBR-12-2015-0315>
- [4] Van Horne, C., Dutot, V., Castellano, S., Sosa, M., & Ahmad, L. (2021). Integrating Entrepreneurship into the Design Classroom: Case Studies from the Developing World. *Journal of the Knowledge Economy*, 12(1), 56–72. <https://doi.org/10.1007/s13132-017-0499-4>
- [5] Syam, A., Hasbiah, S., Yunus, M., & Akib, H. (2018). Determinants of entrepreneurship motivation for students at educational institution and education personnel in Indonesia. *Journal of Entrepreneurship Education*, 21(2). <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85046537176&partnerID=40&md5=404c8a9239223596ddf1f12cba6b40be>
- [6] Soeharso, S. Y., & Riyanti, B. P. D. (2021). THE INTENTIONS TO BECOME ENTREPRENEURS IN THE INDONESIAN VOCATIONAL SCHOOL GRADUATES. *Academy of Entrepreneurship Journal*, 27(5), 1–5. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85114839225&partnerID=40&md5=aa4fd997dbd5b44e9b7707ba9fdf1a71>
- [7] Ncube, T. R., & Lekhanya, L. M. (2021). EVALUATION OF THE EFFECTIVENESS OF ENTREPRENEURSHIP EDUCATION IN PUBLIC INSTITUTIONS OF LEARNING IN THE PROVINCE OF KWAZULU-NATAL. *Journal of Management Information and Decision Sciences*, 25(7), 1–18. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85112792835&partnerID=40&md5=17a03fdbf4320900e076588016e34a97>
- [8] Ardianti, R. I., Millati, I., & Kurniawansyah, D. (2017). Factors affecting entrepreneurial intention among lectures of vocational economics and business at universitas gajah mada. *Advanced Science Letters*, 23(9), 8065–8068. <https://doi.org/10.1166/asl.2017.9836>
- [9] Sudarmiatin, Soetjipto, B. E., Handayati, P., Suharto, & Hidayat, R. (2017). Experiential learning: An alternative model of entrepreneurship learning in higher education. *International Journal of Applied Business and Economic Research*, 15(19),

243–252.

<https://www.scopus.com/inward/record.uri?eid=2-s2.0-85049183767&partnerID=40&md5=d19e0051b23f1b0f3b3e799b68eb7d60>

- [10] Mariani, M., & Borghi, M. (2019). Industry 4.0: A bibliometric review of its managerial intellectual structure and potential evolution in the service industries. *Technological Forecasting and Social Change*, 149, 119752.
- [11] Anand, A., Argade, P., Barkemeyer, R., & Salignac, F. (2021). Trends and patterns in sustainable entrepreneurship research: A bibliometric review and research agenda. *Journal of Business Venturing*, 36(3), 106092.
- [12] Biclesanu, I., Anagnoste, S., Branga, O., & Savastano, M. (2021). Digital entrepreneurship: Public perception of barriers, drivers, and future. *Administrative Sciences*, 11(4), 125.
- [13] Bai, H. (2021). Role of digital technology in transforming organizational competencies influencing green economy: moderating role of product knowledge hiding. *Frontiers in Psychology*, 12, 792550.
- [14] Joensuu-Salo, S., Viljamaa, A., & Varamäki, E. (2022). Sustainable entrepreneurs of the future: The interplay between educational context, sustainable entrepreneurship competence, and entrepreneurial intentions. *Administrative Sciences*, 12(1), 23.