
Digital entrepreneurship competence of vocational students

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ABSTRACT

Digital-preneurship is one way of learning as a medium for students to develop themselves and improve competencies as needed by the world of work. The purpose of this study was to determine the digital-preneurship competence of Vocational High School students. The method used in this research is qualitative with a single-case study approach. Research setting in SMK which has the title of Center of Excellence. The participants involved are Vocational High School students. The data analysis procedure used the Five-Phased Cycle of compiling, disassembling, reassembling, interpreting, and concluding. Data analysis using the software Atlas.ti version 9. The results of this study indicate that students' digital-preneurship competencies are resilient, digital marketing, business management, and brand development. Each component finding has indicators, of resilience consisting of work hard, self-confidence, and commitment. In digital marketing, the finding indicators are advertising techniques and social media marketing. In business management, the findings indicators are evaluation and record, collaborative work, and systematic planning and monitoring. In brand development, the indicator findings are targeting strategy and market segment.

Keywords: competence, digital, entrepreneurship, vocational student

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INTRODUCTION

The latest developments in science and technology require learning patterns according to the needs of the world of work. This has an impact on the learning carried out in Vocational High Schools. This impact is of course synchronized with the goal of vocational high schools, which is to prepare graduates to be ready to work (Undang-Undang Republik Indonesia, 2003). One of the readiness to work for vocational high school graduates is self-reliance through entrepreneurship (Abdurrahman et al., 2023). Concerning this, of course, there are many adjustments made by teachers, which are related to the development of the entrepreneurship curriculum used in learning (Hasbi & Mahmudah, 2020; Hasanah et al., 2020) and competencies that need to be possessed by teachers of entrepreneurship subjects (Iskandar & Kaltum, 2022; Nambisan, 2017).

Entrepreneurial competence in the digital era is needed not only in theory but also in the experiences of teachers in doing business by utilizing digital technology (Abdurrahman &

Mahmudah, 2023). The entrepreneurial competence of the digital era is developed based on the teacher's understanding of using the latest technology (Nofrida et al., 2022). This is part of active learner strategies in the era of digitalization (Syakdiyah et al., 2019; M. Hasanah & Nasir, 2018). Entrepreneurship teachers as the main facilitators for the success and quality of vocational high school graduation (Huang et al., 2020). The development of entrepreneurial skills is not just to motivate students, but there are examples and real examples from entrepreneurship teachers (Apriana et al., 2019). This affects the creativity and innovation of teachers in the teaching factory-based learning process (Kusmintarti et al., 2021; Maruanaya et al., 2021).

The use of digital in entrepreneurship is carried out in various sectors. Digital skills are envisioned as traits that enable firms to exploit opportunities provided by information communications technologies (ICTs) (Drydakis, 2022; Cámara et al., 2021). Other things related to good practice, exchanging ideas, and learning from each other (Directorate-General for Enterprise and Industry, 2020). Strategies according to student needs (Setyowibowo et al., 2016). Teachers develop managerial skills to influence students (Supardi et al., 2022). The potential impact of teacher and school leader entrepreneurial behavior on the wider sense of entrepreneurial education: personal development, creativity, self-efficacy, resilience, taking initiative, and action orientation, i.e. becoming entrepreneurial (Salamon & Verboon, 2020); (Muafi et al., 2021). Based on the results of research that have been done by previous researchers entrepreneurship teachers ideally have communication competence, interpersonal and intercultural interaction, self-development, and security competencies (Kurmanov et al., 2020; Wibowo et al., 2018). New digital skills (Linares Chamber of Commerce, 2020). The competencies can be developed considering three major groupings:(1) individual characteristics, (2) cultural characteristics, and (3) knowledge sharing (Garcez et al., 2022). Pedagogical practices and professional learning environment (Castañeda et al., 2021).

This research is different from the research that has been done as previously described. The urgency of this research is to find out the competencies that students must have in doing entrepreneurship using digital. Previous research has focused more on teacher competence. Meanwhile, this research focuses on the competencies produced by students through the entrepreneurial learning process. So, the novelty of this research is to provide a complete picture of students' competence in entrepreneurship by utilizing digital. Based on the background of the problem, the purpose of this research is to explore the competence of digital-based entrepreneurial students through the learning provided by the teacher.

METHOD

Research Design

This study uses a qualitative type with a single-case study approach. The reason for using this method is because this study explores the meaning of the entrepreneurial practice of Vocational High School students based on digital. Exploration is carried out by understanding the phenomena that occur to find the intent of the practices being carried out by social groups (Creswell & Creswell, 2018). The research was conducted in 5 (five) Vocational High Schools that received the title of Center of Excellence from the Directorate of Vocational High Schools for 2 (two) years in a row. The reason for choosing a research setting for SMK that is awarded the Center of Excellence is to be used as best practices and transferability with other schools. The participants involved in this study were students. The number of participants is 5 students who have started entrepreneurship. The selection of participants were chosen randomly and it was clear that their activities were those who had their businesses.

Data Collection Technique

Data collection techniques in this study using interviews. The purpose of choosing this method is to be able to explore deeper meanings related to students' entrepreneurship learning practices through digital (digital-preneurship). Being interested in others is the key to some of the basic assumptions underlying the interviewing technique (Seidman, 2006). The technique used in this interview is semi-structured. The reason for using the structured interview technique is because the researcher has the right guidelines and is in line with the research objectives and can be developed during the interview process. The concept of a 'semi-structured depth interview' covers a great range of interview strategies, all counterposed to the concepts of a 'fully structured' interview and (less strongly perhaps) of a haphazard or unstructured one (Wengraf, 2001). Because it uses a combination of two methods, namely structured and developing questions at the time of data collection, the interviews are structured using guidelines. Interview guidelines can be seen in Table 1.

Table 1. Interview Guidelines

No.	Components
1	Teacher competences
2	Digital platform
3	Product range

Data Analysis Procedures

The data analysis procedure of this study used the Five-Phased Cycle (Yin, 2016). In sequence, the research procedure begins with (1) Compiling; (2) Disassembling; (3) Reassembling (and Arraying); (4) Interpreting; and (5) Concluding. The data analysis procedure can be seen in Figure 1.

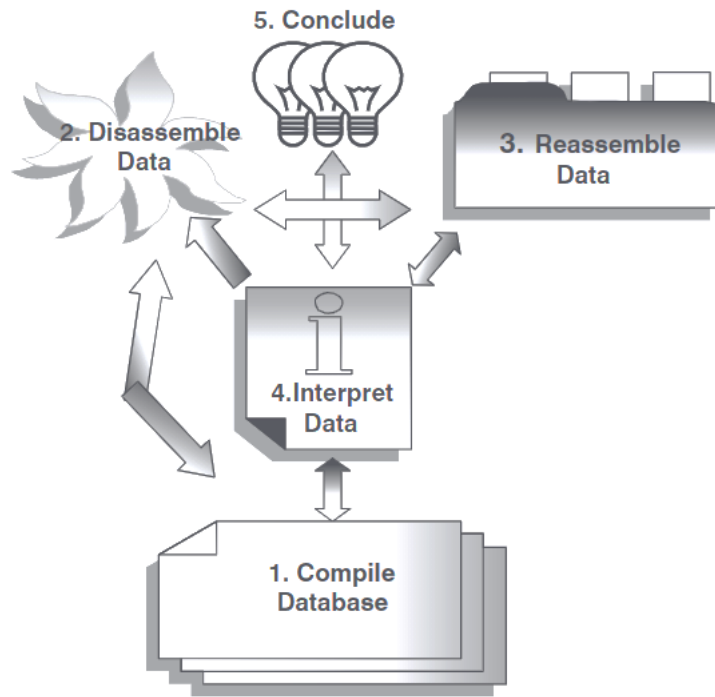


Figure 1. Data Analysis Procedure Using Five-Phased Cycle
Sources: Yin (2016)

Data analysis in this study was assisted by Atlas.ti software version 9. The purpose of using the software is to make it easier to manage files (Mahmudah, 2021) so that the analysis can be carried out according to the Five-Phased Cycle procedure (Yin, 2016). The data analysis procedure in sequence and detail can be explained as follows:

1. Compiling, This analysis is carried out by selecting relevant data related to students' entrepreneurial practices using a digital platform. These data were obtained from the results of interviews and field notes written in research journals. This process aims to obtain relevant data so that field results data can be organized and entered into a data database that is ready to be analyzed in the next process.
2. Disassembling and unpacking the data that has been entered into the database. It aims to create meaning from the participants by coding digital-preneurship research.
3. Reassembling (and Arraying), in this study, is to compile research codes that have been carried out from previous data analysis procedures by making tables and research concept

maps.

4. Interpreting, by recompiling the database in some new way. It aims to interpret the results of research that has been made into a concept map.
5. Concluding, This is related to the interpretation in the previous phase. So that the conclusions can be used as part of providing suggestions, recommendations, and evaluations of the digital-preneurship practice of Vocational High School students.

RESULTS AND DISCUSSION

Based on the results of interview data conducted on all participants at the Vocational High School, the data was obtained by using a recorder. During the interview process, all participant answers were recorded and then the data was transcribed. The data analysis process sequentially using the Five-Phased Cycle can be described as follows:

1. Compiling

The data is collected in one file. The data is data that has been selected so that the data is relevant to the purpose of this study. The participants use the code P (Participant) and numbers from 1 (which means the order of participants). The participants of this study consisted of 5 (five) people so the participant codes that appeared were P1, P2, P3, P4, and P5. The number behind the participant code is the serial number of the questions given by the researcher. In general, the total questions given were 3 (three) questions (so that 1, 2, and 3) were written, but implicitly, there were additional questions that were developed while in the field. Question development will be marked in green. The data from the interviews that have been compiled in detail are described in Table 2.

Table 2. Compiling Data

Question 1	:	Does your teacher understand the concept of digital-preneurship? How does your teacher explain digital-preneurship? Your teacher owns a business, doesn't he?
P-1/1	:	Yes, Buk (with a sigh). Yes, I understand the material presented, thump. In general, it's theoretical, Buk. Then the teacher is because the teacher is taken from another subject, so that's it, Mom. Don't have a business
P-2/1	:	My teacher is very skilled in entrepreneurship because he has a business. The digital concept is delivered in great detail. I am so excited to have a business. First of all, building a business starts with working together, especially by involving teachers as coaching in entrepreneurship
P-3/1	:	Very understanding, he used to have a business because it was not well managed, so it was not continued. Now the theories given relate to how the business was developed by starting with careful planning. When the business is running, there must be monitoring. My teacher also conveyed related to the role of digital in business. Especially social media that can be used by students as a medium in market development
P-4/1	:	The material is related to students who must be ready to be independent. That's it Buk. So

	my entrepreneurship teacher doesn't have a business
P-5/1	: Yes, understand in theory. My teacher also gave reinforcement that one must have the self-confidence to start a business and develop oneself in business. The digital concept according to my teacher is a growing medium that is used in business. My teacher doesn't have a business yet
Question 2	: What digital platform do you use? Why choose to use this platform? How can you use it?
P-1/2	: All existing platforms can be used in business processes, my teacher said
P-2/2	: Platforms such as Shopee already exist as a medium in business. So, even though using someone else's digital platform, the most important thing is that there is always an evaluation of the goods that already exist, have been sold, and are well recorded. Yes, with the tools on the platform
P-3/2	: Lazada and Tokopedia, that's what has just been taught. The teacher said that entrepreneurship was the simplest one that could be used. Then, first of all, it is choosing consumers with various existing strategies. So what is the business related to that then on the platform you can set/make arrangements to choose who the target consumers are
P-4/2	: So actually they have not been taught to use the platform, because the material is still being delivered. Well, that's what my teacher said the important thing is hard work If you work hard and use any platform, my teacher says, you will succeed
P-5/2	: Follow what's already there, boo, like shop. Yes, he was taught to use it and introduced to using Shopee. The most important thing is the marketing technique even though it uses various platforms
Question 3	: To what extent are your products marketed? Can the digital platform you use help market your product?
P-1/3	: Nothing yet hehe
P-2/3	: Most do not have a business
P-3/3	: Some already have a business and it's a business owned by their parents, such as batik fabrics. If I join my parents in the food business. In my opinion, the most effective is because it uses social media such as Instagram. If edited well then people will be able to see well.
P-4/3	: As far as consumers already know the business being developed hehehehe
P-5/3	: Very helpful, especially if you are committed

2. Disassembling

The data that has been compiled in stage one above, the next step is to interpret and formulate the answers that have been done by the participants. Sequentially and technically, it can be described in Figure 2.

1:1 p 2 in Data	Yang paling penting itu adalah teknik pemasarannya walaupun menggunakan berbagai platform	1 Coding	Advertising Tech...
1:6 p 1 in Data	Pertama-tama untuk membangun bisnis dimulai dari kerja bersama-sama terutama dengan melibatkan guru sebagai coaching dalam wirausaha.	1 Coding	Collaborative W...
1:15 p 2 in Data	Sangat membantu Bu, apalagi jika komitmen	1 Coding	Commitment
1:5 p 1 in Data	Konsep digital disampaikan dengan sangat detail. Saya jadi semangat pengen punya bisnis.	1 Coding	Digital Concept
1:3 p 1 in Data	Secara umum memang teoritis Buk. Trus gurunya kan karena guru diambil dari mata pelajaran lain, jadi ya gitu Buk. Ndak punya bisnis	1 Coding	Entrepreneurshi...
1:12 p 1 in Data	Sehingga walau menggunakan platform digital milik orang lain yang paling penting itu selalu dilakukan evaluasi terhadap barang-barang yang sudah ada, sudah dijual, dan semua terekam dengan baik. Ya dengan tools yang ada di platform itu	1 Coding	Evaluate and Re...
1:9 p 1 in Data	sebenarnya belum diajari menggunakan platformnya, karena masih materi disampaikan.	1 Coding	Learning Methods
1:4 p 2 in Data	Sejauh para konsumen sudah mengetahui bisnis yang dikembangkan hehehehe	1 Coding	Market Segment
1:13 p 1 in Data	Guru saya juga memberikan penguatan bahwa harus memiliki kepercayaan diri untuk memulai bisnis dan mengembangkan diri dalam bisnis.	1 Coding	Self-Confidence
1:7 p 1 in Data	Terutama media sosial yang bisa digunakan oleh para siswa sebagai media dalam pengembangan market	1 Coding	Social Media

Figure 2. Disassembling Data

1:8 p 2 in Data	Menurut saya ya yang paling efektif itu karena menggunakan social media seperti Instagram. Dedit yang bagus trus orang akan bisa melihat dengan baik.	1 Coding	Social Media Ma...
1:10 p 1 in Data	Sekarang teori-teori yang diberikan berkaitan dengan bagaimana bisnis itu dikembangkan dengan dimulai pada perencanaan yang matang. Ketika bisnis sudah berjalan harus ada monitoring.	1 Coding	Systematic Plann...
1:14 p 1 in Data	memilih para konsumen dengan berbagai strategi yang ada. Jadi bisnisnya terkait apa gitu lalu di platform itu bisa disetting/melakukan pengaturan untuk memilih siapa saja target konsumen	1 Coding	Targeting Strategy
1:11 p 1 in Data	Ya dengan tools yang ada di platform itu	1 Coding	Tools Digital
1:2 pp 1-2 in Data	kata guru saya yang penting adalah kerja keras hehehehe Kalau sudah kerja keras dan menggunakan platform apapun kata guru saya nanti akan berhasil	1 Coding	Work Hard

Figure 3. Disassembling Data

Based on Figure 2 there are reduced data. So that the red one is not used in making the concept map because it does not match the categorization in each meaning of the participants' statements. The data that has been collected means each participant's answer, and then data collection is carried out related to research codes. The research codes used are relevant to the theme and purpose of the research so that these codes can answer the research questions. The research codes that have been compiled can be described in Table 3.

Table 3. Codes

Codes	
● Advertising Techniques	● Commitment
● Collaborative Work	○ Entrepreneurship Theory
○ Digital Concept	● Evaluate and Record
● Market Segment	○ Learning Methods
● Systematic Planning and Monitoring	● Self-Confidence
○ Social Media	● Targeting Strategy
● Social Media Marketing	○ Digital Tools
● Work Hard	○ Tools of Media

3. Reassembling

Based on the data above, the next step is to make a research concept map. The research concept map provides an overview of the novelty found in this study. Overall, the research concept map can be seen in Figure 3.

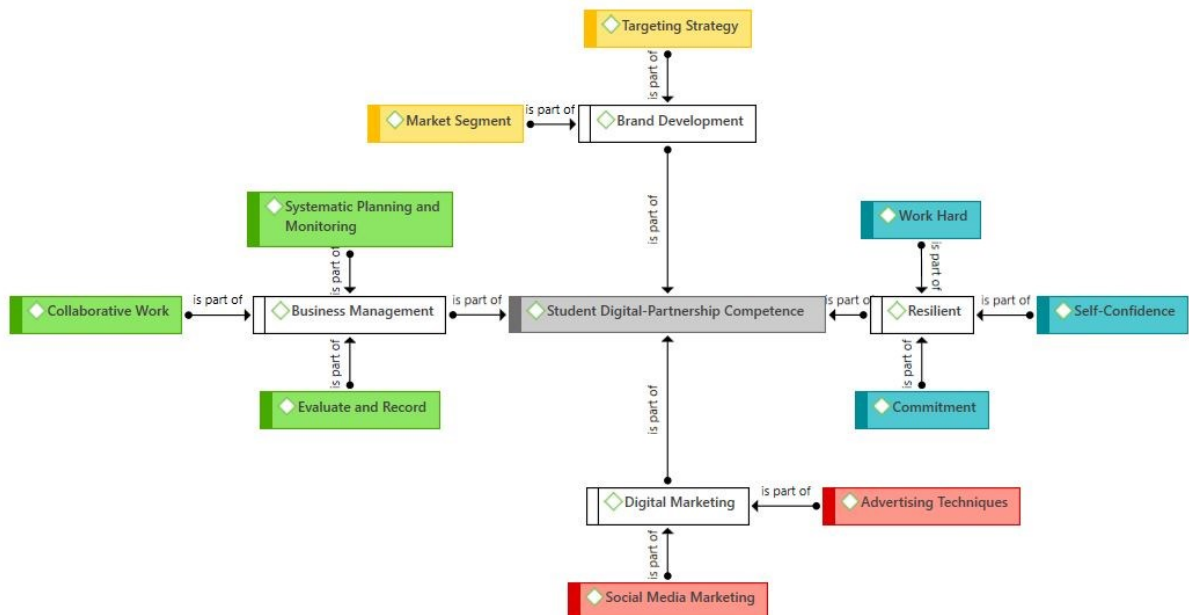


Figure 3. Research Concept Map

4. Interpreting

Interpretation is a part that relates to explaining related to research findings. Discussed in the Discussion section

5. Concluding

The conclusion of this study is an important part that describes the results of the exploratory research conducted. As explained in the conclusion section of this article.

This discussion is a series of data analysis processes in the fourth stage, namely interpretation. Based on Figure 3 on the research concept map, it is explained that the novelty of this research is related to student digital-preneurship competencies consisting of resilience, digital marketing, business management, and brand development. Each competency has indicators.

Resilient

The resilient indicators found in this study consist of self-confidence, commitment, and work hard. These findings follow the theory which says that students can improve skills in building resilience to create behavior change (Venkateswara et al., 2022; Munawaroh & Nurmalasari, 2021). It means that resilient students feel connected to school and have positive feelings toward learning at school (Yilmaz Findik, 2016). This statement is confirmed in the results of research conducted by Dwiningrum et al., (2020) who said that with strong resilience, students can implementation of the theory. Successful students demonstrate skills in formal thinking, creative thinking, applying entrepreneurship, and all of which impact their quality of life (Rojas-Suárez et al., 2020; García Crespo et al., 2019). The competence developed by students in increasing resilience is to think critically and be able to determine alternatives to inappropriate planning (Dewantoro & Rachmawati, 2020).

Based on the discussion above, it can be concluded that resilience is a key competency for students to be able to defend themselves in conditions and situations outside the plan in the self-development process through digital-preneurship. Many problems are faced but can be solved with intelligent fighting power through self-confidence, commitment, and work hard. The findings of the indicators from this study provide a clear picture that these indicators are a combination that can be used by students to be resilient, both during the learning process, self-development through digital-based entrepreneurship, as well as independence after graduating from Vocational High School.

Digital Marketing

Digital marketing in this study has indicators consisting of social media marketing and advertising techniques. The results of this study are in line with the results of research conducted by (Prathivi, 2020) who said that students' digital marketing includes components of knowledge

on digital marketing function on business, online frequency, and type of digital marketing used. The importance of digital marketing as a skillset for existing marketers and new marketing graduates (Veer & Dobele, 2019; Wulandari & Marcelino, 2022). Other indicators related to knowledge of social media, knowledge of mobile, knowledge of e-commerce, knowledge of analytics and real-time practices, and knowledge of the internet & software knowledge (Kovacs, 2021; Guerrero et al., 2021; Kovacs et al., 2022). These competencies certainly have changed. The changes felt are increasing visitors to the website, increasing followers on Instagram and Facebook accounts, and increasing sales (Furqany, 2021). Digital marketing has a great impact on attracting students, especially young people preparing to graduate from high school (Makrydakakis, 2021).

Based on the discussion, it can be concluded that students' knowledge of utilizing technology and information in entrepreneurship is an important part that needs to be developed. This study has a unique indicator finding that students' competencies that need to be understood are related to social media marketing and advertising techniques. The use of technology alone is not comprehensive, because skills in using social media and advertising techniques also require in-depth knowledge. Therefore, students who are proficient in the use of social media will certainly have an advertising technique. So the findings of indicators from this study can provide understanding to students in increasing the number of product sales and increasing the number of followers on various social media used, of course, consumers will know which products are being sold by Vocational High School students.

Business Management

The indicators of the findings of this study provide information that business management is related to systematic planning and monitoring, collaborative work, and evaluation and record. The results of this study agree with the theory (Xiao & Ramsden, 2016) who said that there are three things related to business management, namely strategic choices of innovation, product, and production that are essential to optimize the expertise and sources of finance available for creating and growing a high-tech business. Management is an important part of the entrepreneurial process. Good management will make entrepreneurship sustainable (Ali et al., 2022). Important topics in business management are related to finance management, operation management, organization, human resources management, and business strategy (Ali et al., 2022).

Based on the results and discussion, the conclusion is that management is an important basis for students to manage the business they run. Business management as an indicator of the findings of this research is related to planning, monitoring, evaluation, and recording. Accountability becomes important for the entire business management process. This is what

students need to develop through the entrepreneurship learning process in Vocational High Schools.

Brand Development

The indicators found in this study related to brand development are targeting strategy and market segment. The results of this study relate to the brand management teams' need to remember that consumers only reward those brands that provide them with the desired type of functional, emotional, personal, or social value (Veloutsou & Delgado-Ballester, 2018). Brand imagery and brand feelings of the emotional route at present. As to the part of brand imagery, one could search for certain vocabularies to connect to the brand name, such as stable, familiar, customary, and assurance (Eivani et al., 2013; Surapto, 2020; Palmer, 1996). Branding has emerged as a top management priority (Keller & Lehmann, 2006). Brand development starts from a focus on the product by developing its features and attributes, advantages, or product benefits, then creates product/ brand personality, and then shaped with the brand mission and values so the product has intangible added values for the consumer (Sukma Wijaya, 2013; Janiszewska & Insch, 2012).

Based on the discussion, it can be concluded that Vocational High School students need teacher assistance in targeting strategy and market segment. It is a continuous skill with other indicators in entrepreneurship. Techniques and strategies for developing learning outcomes will be used as part of the evaluation.

CONCLUSION

Based on the results of research, data analysis, and discussion, it can be concluded that the digital-preneurship competencies of vocational high school students consist of resilience, digital marketing, business management, and brand development. Each component's findings have indicators that are unique to the research novelty. This component is an important part of students developing digital-preneurship skills and competencies. This research becomes suggestions and recommendations for Vocational High School teachers to be able to improve competence so that they can provide materials, theories, and examples, and improve skills to students. In the end, Vocational High School graduates have a strong attitude of independence to be able to carry out entrepreneurial activities as part of the goals of vocational education.

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