

## Learning Styles Towards Entrepreneurship Learning Outcomes and Career Development: A Structural Equation Model Analysis

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### ABSTRACT

Learning styles play an important role in improving entrepreneurial learning outcomes and career development. Information processing and understanding of a theory will be well absorbed with the application of the right learning style. This research was conducted to determine the extent of the influence of the application of learning styles on the learning outcomes of entrepreneurship and career development of electronic engineering students. The number of students selected as many as 212 people with the cluster random sampling method. Data was collected through a questionnaire using a Likert scale. Testing of learning style variables using Explanatory Factor Analysis (EFA) and seeing the validity of the indicators of each variable using Confirmatory Factor Analysis (CFA). Testing of latent hypotension between variables was carried out using SEM. The results showed that outer loading, Cronbach alpha, composite reliability, AVE were valid and reliable. This means that the instrument used is valid and reliable. There is a positive relationship between structural predictor models; learning style affects the learning outcomes of entrepreneurship and career development. There is a mediating influence of entrepreneurial learning outcomes on the relationship between learning styles and career development. To achieve optimal entrepreneurship learning outcomes and career development, it is necessary to apply the right learning style.

**Keywords:** *Learning Style, Entrepreneurship Learning Outcomes, Equation Model Analysis*

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## INTRODUCTION

In the era of society 5.0 and the development of industry 4.0, the world of education plays a very important role in improving the quality of human resources (Hidayat et al., 2021). The application of science that can be applied by technology will not apply the hard skills and soft skills of a student but can be applied by technology. Industry 4.0 also requires the world of education to adjust the curriculum according to the needs of the industrial revolution and be able to keep up with technological developments by utilizing information and communication technology as a means to facilitate the learning process. In addition, the world of education will also get various interesting references and appropriate learning methods. Challenges in the era of the

industrial revolution 4.0 and society 5.0, students have difficulty dealing with life's problems (creativity, critical thinking, collaboration, and communication) besides that students must also have the ability to solve (Husin, Giatman, Jalinus, Usmeldi, & Hidayat, 2021). Not everything that students aspire to can be realized after they study. Therefore, students need to have high creativity to be able to solve problems in their lives by increasing their entrepreneurial spirit after completing their studies on entrepreneurship. Discussing entrepreneurship learning outcomes cannot be separated from the factors that can affect entrepreneurship learning outcomes. Learning style is a factor that can affect entrepreneurship learning outcomes and career development (Nowiński et al., 2019; Boldureanu et al., 2020).

Learning style is a way for students to be able to capture and absorb information quickly and easily (Coman, Țiru, Meseșan-Schmitz, Stanciu, & Bularca, 2020). By knowing students' learning styles, an educator will be able to provide and prepare a supportive learning environment that will make it easier for students to absorb information optimally (Diao & Shih, 2019). In improving learning outcomes, it is very important to understand student learning styles, student learning styles are students' tendencies to capture/absorb and obtain information/materials conveyed by the teacher. As is known, in carrying out learning activities, students capture information or knowledge through their five senses (Van Halem, Van Klaveren, Drachslers, Schmitz, & Cornelisz, 2020). Learning that is following the interests and learning styles of students will be able to increase students' understanding of the material or information provided and can create conducive and fun learning and improve entrepreneurial learning outcomes. Entrepreneurship is the process of identifying, developing, and realizing a vision (Apriana, Kristiawan, & Wardiah, 2019). The vision developed is in the form of innovative ideas, opportunities, and better ways of doing things. The high level of unemployment and the low interest in entrepreneurship are the concerns of universities to produce graduates who are not only job seekers but also graduates who have succeeded in opening up opportunities to create jobs for themselves and others. College graduates do not only rely on diplomas to find work but are also required to have the competence and skills to be able to find jobs that match their interests and talents. One alternative to overcoming these problems is to instill an entrepreneurial spirit in students from an early age so that limited job opportunities are no longer a big problem because students can run their businesses. The main capital in entrepreneurship is the willingness and tenacity to seriously run a process or business (Mulyana et al., 2020; Othman et al., 2020). In entrepreneurship activities, not only strong determination but also competence, skills, and knowledge in managing a business are also very important and must be balanced.

Studying entrepreneurship will greatly benefit to students from different social and economic backgrounds (Si, Ahlstrom, Wei, & Cullen, 2020), the importance of studying entrepreneurship is because every student has an inherent talent in a particular discipline or subject with diverse social and economic backgrounds. By understanding the talents that exist in each individual, each student will be able to create opportunities, increase self-confidence, ensure social justice and stimulate the economy (Valli, Peterman, & Hidrobo, 2019). Teaching entrepreneurship means teaching students to develop unique skills and think outside their brains. Therefore, studying entrepreneurship can improve students' skills and abilities in entrepreneurship. The future life or world is uncertain or unpredictable according to one's wishes. Therefore, there is a need for entrepreneurial learning. By studying entrepreneurship, students will gain initial knowledge about how to start a business

(Choi & Markham, 2019; Pardo-Garcia & Barac, 2020). This entrepreneurship education is an excellent foundation for developing creative, innovative ideas and developing their own business later so that they are ready to succeed and compete in the 21st century (Rodriguez & Lieber, 2020). Through the results of entrepreneurship learning, students will be assisted in studying business fields such as marketing, sales, finance, management, and broader skills in the ability to adapt to the times, establish effective communication relationships and increase self-confidence. Family background is the first environment that encourages someone to have an interest in entrepreneurship (Kemper, Hall, & Ballantine, 2019). The person will make observations on the family business. This will generate interest in jobs that have a high degree of flexibility and independence. Support from a strong family will be ready to face the capabilities and resources needed in entrepreneurship. The application of appropriate and appropriate learning styles will assist students in obtaining information quickly to obtain good entrepreneurial learning outcomes and be able to carry out career development appropriately. One of the best things a student can do to achieve career goals is to keep learning.

Career development is the process of self-knowledge, exploration, and decision-making that shape one's career (Niyadurupola & Esposito, 2021). A career is a need that must be continuously developed in a student to be able to motivate himself and continue to improve his abilities and skills. Higher education is needed so that career development can compete with the times (Kohli, 2019). By pursuing higher education, you will acquire many supporting skills (Tang, 2020). Career development includes the activities of each student that must be prepared to take a certain career path. Career plans should be made by students as early as possible and accompanied by realistic career goals. A person's personality is influential in determining career choices (Garaika & Margahana, 2019). The job offered by someone does not mean that person will accept it because the person considers the job not suitable for his personality. Career planning is an important thing because with career planning students will have the readiness and will reduce tension and anxiety in finding job information and making decisions about the desired career. Students should also know their interests and talents before graduating to find out what jobs are suitable for them in the future. Career development is inseparable from one's learning style (Janizadeh et al., 2019) because to learn, maintain, and apply new information, skills are needed that support the maintenance and development of careers later.

Based on the learning style possessed by students, they will be able to determine how the learning outcomes of entrepreneurship will be. With the right learning style, students' entrepreneurial abilities will be able to increase to the maximum. The selection of an appropriate learning style greatly affects success in entrepreneurship in this case it will be a benchmark in improving student entrepreneurship learning outcomes. Learning style will also be a trigger in one's career development (Barthauer, Kaucher, Spurk, & Kauffeld, 2019). Careers will improve by continuing to learn because by learning we will be able to apply new information, retain it and learn it, so a supportive learning style is needed to achieve student career goals. This research was conducted to see the learning styles that can affect student entrepreneurship learning outcomes and career development based on the factors that influence each of these latent variables.

## **METHOD**

### **Research Design**

This research is a survey research with quantitative data. Get data from the sample to describe the opinion or attitude of this population researcher with a survey (Hasnida, Ghazali, Suppian, & Zaini, 2022). The data collection technique in this study used the cluster random sampling technique.

### **Population and Sample**

The population in this study was 226 students of the electronics engineering study program. The entire population is sampled because it is only under 500 (Hair et al., 2019; Shi et al., 2019). With a large number of samples, it will reduce the occurrence of bias.

### **Instruments and Data Analysis**

Collecting research data using an instrument in the form of a questionnaire with a Likert scale. The questionnaire contains respondent's profile data which includes: gender, a path of entry, last education. Questionnaires were distributed and the results were tested using SPSS Version 20 and the Outer Model (Measurement Model). To find out whether the collected data meets statistical rules, the indicators of learning style variables are tested using Explanatory Factor Analysis (EFA) using the SPSS Version 20 application. Measurement of the validity and reliability of indicators for each variable uses Confirmatory Factor Analysis (CFA) using the SmartPLS application. Validity and reliability tests are used to test the validity and consistency of research instruments. Validity test criteria (convergent and discriminant) and reliability if outer loading  $> 0.7$ , composite reliability  $> 0.7$ , and Average variance Extracted (AVE)  $> 0.5$  (Hair et al., 2019; Boubker & Douayri, 2020).

Testing the close relationship between respondents' profile variables and learning styles, entrepreneurial learning outcomes, and career development using the chi-square test (Chi-Square) using the SPSS application. The hypothesis was tested using the Inner Model (Structural Model). Hypothesis testing: causal testing (H1, H2, H3, and H4) using Structural Equation Modeling (SEM) SmartPLS analysis.

## **RESULT AND DISCUSSION**

### ***Characteristics of Respondents***

The number of questionnaires distributed by students majoring in electronics engineering was 226 people, who participated in filling out the questionnaire as many as 212 people. Respondents are dominated by male students with 55% (116 people), respondents with a high school education with more than 61%, and independent entry routes are more than other entry routes by 46% as shown in Table 1.

Table 1. Characteristics of Respondents

<b>Respondent Profile</b>	<b>Category</b>	<b>Number of Samples</b>	<b>Percentage (%)</b>
Gender	Man	116	55
	Female	96	45
	Total	212	100
Education	SMK	64	30
	SMA	129	61
	MA	19	9
	Total	212	100

Path of Entry	SNMPTN	38	18
	SBMPTN	77	36
	Independent	97	46
	Total	212	100

#### 1. Explanatory Factor Analysis Test (EFA)

This test is only used for learning style variables. This is because the determination of learning style indicators is not based on theory or expert opinion, but refers to the learning styles that apply to the individual students themselves. The five indicators and items developed need to be tested first to whether they meet the correct statistical rules. The test was carried out with Kaiser Meyer Olkin (KMO) and Bartlett test with the criteria if the KMO value  $> 0.5$  and Bartlett sig  $< 0.05$  then the test can be accepted and continued (Shrestha, 2021). Data processing using SPSS version 20 application.

Table 2 is the result of the Kaiser Meyer Olkin (KMO) and Bartlett factor analysis test, the KMO value  $0.577 > 0.5$  and the Bartlett sig value  $< 0.05$ , then the factor analysis process can be continued.

Table 2. Factor Analysis Test

<b>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</b>		<b>.577</b>
Bartlett's Test of Sphericity	Approx. Chi-Square	273.128
	df	66
	Sig.	.000

From 12 statement items to 5 factors. Furthermore, to group each item into its factors, a component matrix that is rotated using the varimax method is used as shown in Table 3.

Table 3. Rotated Component Matrix

	<b>Component</b>				
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
P1	.787	-.057	-.090	.247	-.035
P2	.888	.054	-.009	-.001	-.076
P3	.673	.136	.199	-.163	.341
P4	.078	.090	.064	.102	.807
P5	.157	.056	.138	.386	.297
P6	.052	.306	.063	.423	-.253
P7	.229	.070	.384	.264	-.452
P8	.007	.054	.793	-.218	-.059
P9	-.028	-.116	.714	.242	.134
P10	-.020	.035	-.065	.768	.037
P11	.071	.781	-.059	.093	.102
P12	-.006	.843	.015	.050	.004

In determining which factor the statement item belongs to, it is determined by looking at the largest extraction value. Furthermore, the name of the indicator is determined from five factors formed as follows: visual (X1), aural (X2), accommodator (X3), read/write (X4), and kinesthetic (X5).

#### 2. Confirmatory Factor Analysis Test (CFA)

This test aims to see the validity and reliability of the indicators of each variable (Marsh, Guo, Dicke, Parker, & Craven, 2020). The concept used in this case is through the measurement of validity and reliability (Ozkok et al., 2019). Data processing is carried out using the SmartPLS. CFA testing is carried out on each research variable.

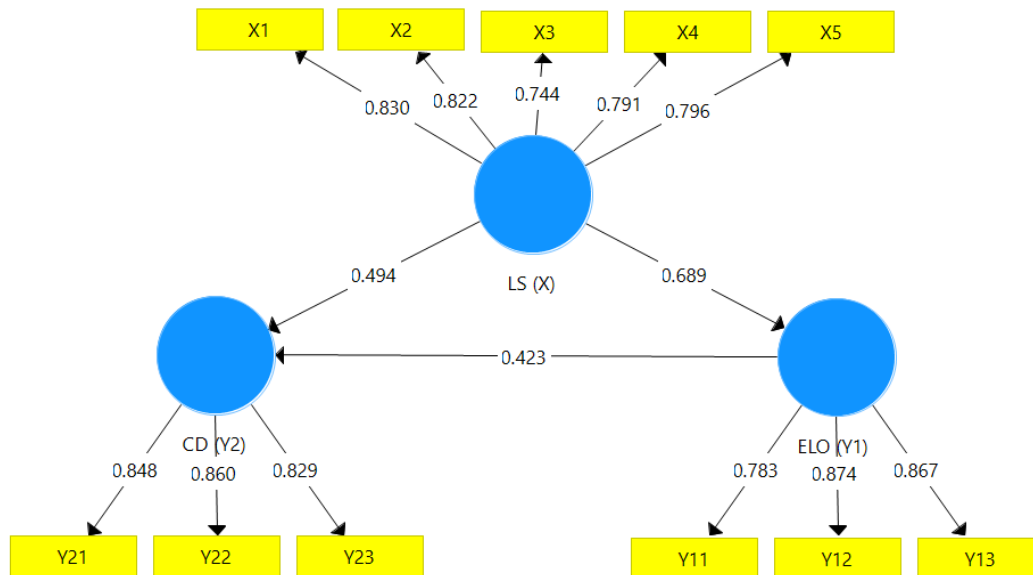
### **Outer Model (Measurement Model)**

The measurement model is a test that aims to determine the relationship between latent variables and their indicators (Cepeda-Carrion, Cegarra-Navarro, & Cillo, 2019). Testing this model using the PLS Algorithm procedure. The outer model analysis phase was measured using validity and reliability tests.

#### *Convergent Validity*

Convergent validity aims to determine the validity of each relationship between construct indicators or latent variables (Hair et al., 2019). The exogenous variable in this study is learning style, while the endogenous variable is the result of learning entrepreneurship and career development. The CFA test results consist of the Outer Loading (OL) results shown in Figure 1, the item is declared valid if the Outer Loading value is  $> 0.7$  (Hair et al., 2019; Cepeda-Carrion et al., 2019). From Table 4, the test results show that the OL values for 5 indicators on exogenous variables start from the smallest 0.74 (accommodator) to the largest 0.83 (visual). The results showed that all  $OL > 0.7$  for all exogenous variables, so it can be concluded that all OL were significant. Thus the visual (X1), aural (X2), accommodator (X3), read/write (X4), and kinesthetic (X5) indicators are valid for measuring the latent variables of learning styles.

Figure 1. Outer Loading (OL)



The results of the CFA test for endogenous variables, namely learning outcomes of entrepreneurship and career development for all indicators range from 0.78 (initial knowledge) to 0.87 (readiness) as shown in Table 4. The results showed that all  $OL > 0.7$  for all endogenous variables, so all OL keywords can be significant. Thus, indicators of initial knowledge (Y11), readiness (Y12), family background (Y13), education (Y21), skills (Y22), and personality (Y23) are valid for measuring entrepreneurship learning outcomes and career development variables.

Table 4. CFA Measurement Model Validity Test

Latent Variable	Indicator	Variable Manifest	OL	Critical Value	Decision
Learning Style / LO (X)	Visual	X1	0.83	> 0.7	Valid
	Aural	X2	0.82		
	Accommodator	X3	0.74		
	Read/write	X4	0.79		
	Kinesthetic	X5	0.79		
Entrepreneurship Learning Outcomes / ELO (Y1)	Prior Knowledge	Y11	0.78	> 0.7	Valid
	Readiness	Y12	0.87		
	Family's Background	Y13	0.86		
Career Development / CD (Y2)	Education	Y21	0.84	> 0.7	Valid
	Skills	Y22	0.86		
	Personality	Y23	0.82		

#### *Discriminant Validity*

Discriminant validity aims to ensure that each concept in each latent model is different from other variables. This validity analysis uses the Fornell-Larcker criteria and the Heterotrait-Monotrait Ratio (HTMT) (Hilkenmeier et al., 2020; Yusoff et al., 2020). If the variance of a variable, item, or indicator is greater than the latent variable compared to other variables, it means that a unique value has emerged, and if the HTMT value < 0.9 means it is valid (Yusoff et al., 2020).

Table 5. Fornell-Larcker Criterion

Latent Variable	Career Development / CD (Y2)	Entrepreneurship Learning Outcomes / ELO (Y1)	Learning Style / LO (X)
Career Development / CD (Y2)	0.846		
Entrepreneurship Learning Outcomes / ELO (Y1)	0.763	0.842	
Learning Style / LO (X)	0.785	0.689	0.797

Based on Table 5, the results of the analysis show that all correlation values are following the Fornell-Kacker criteria and each variable meets the requirements of the discriminant validity test. Some that are close to the value of 0.9 are declared established and accepted.

Table 6. Heterotrait-Monotrait Ratio (HTMT)

Latent Variable	Career Development / CD (Y2)	Entrepreneurship Learning Outcomes / ELO (Y1)	Learning Style / LO (X)
Career Development / CD (Y2)			
Entrepreneurship Learning Outcomes	0.896		

/ ELO (Y1)		
Learning Style / LO (X)	0.899	0.834

From Table 6 it can be seen that all variables have HTMT < 0.9. it can be concluded that this value indicates a unique and valid discriminant validity. The observed variable is completely different from the others.

#### *Reliability*

From Table 7. Cronbach's alpha and composite reliability values are all > 0.7 and Average Extracted Variance (AVE) > 0.5, it can be said that each item on learning styles, learning outcomes, and career development produces reliable and consistent data.

Table 7. CFA Measurement Model Reliability Test

Latent Variable	Indicator	Manifest	Cronbach's Alpha	Composite Reliability	AVE	Critical Value	Decision
Learning Style / LO (X)	Visual	X1	0.856	0.897	0.635	> 0.5	Reliable
	Aural	X2					
	Accommodator	X3					
	Read/write	X4					
	Kinesthetic	X5					
Entrepreneurship Learning Outcomes / ELO (Y1)	Prior Knowledge	Y11	0.795	0.880	0.710	> 0.5	Reliable
	Readiness	Y12					
	Family's Background	Y13					
Career Development / CD (Y2)	Education	Y21	0.801	0.883	0.715	> 0.5	Reliable
	Skills	Y22					
	Personality	Y23					

#### **Inner Model (Structural Model)**

The structural model is a test that is used to predict causal relationships between exogenous and endogenous variables that have been built based on the substance of the theory (Chao, 2019). Test this inner model using the help of Bootstrapping and Blindfolding procedures in SmartPLS (Chao, 2019; Anaya-Sánchez et al., 2020). The outer model analysis phase was measured using validity and reliability tests.

#### *R Square and Q Square*

R Square (determinant coefficient) is a way to assess how much an endogenous construct can be explained by an exogenous construct. R Square values of 0.25, 0.5, and 0.75 indicate that the model is weak, moderate, and strong (Hair et al., 2011; Hair et al., 2019).

Q Square is used to measure how well the path model can predict the value of the data that sings the song. If the value of Q Square > 0, it indicates that the exogenous construct variable has predictive relevance to the endogenous construct variable. The classification of relevant predictions can be seen in the criteria for values higher than 0, 0.25, and 0.50, each of which indicates that the exogenous construct has weak, moderate, and strong predictive relevance for the endogenous construct (Hair et al., 2019; Anaya-Sánchez et al., 2020).



Table 8. R Square and Q Square

Variable	R Square	Category	Q Square	Category
Career Development / CD (Y2)	0.711	Moderate	0.501	Strong
Entrepreneurship Learning Outcomes / ELO (Y1)	0.475	Moderate	0.332	Moderate

Table 8 presents the R Square value for the career development variable of 0.711. This value indicates that the career development variable is influenced by learning style by 71.1% and is included in the strong category. In addition, the career development variable has a Q Square value of 0.501. This value indicates that the learning style variable has a predictive relevance for the career development variable of 0.501 with a strong prediction.

R Square for the variable of entrepreneurship learning outcomes is 0.475. This value indicates that the variable of entrepreneurship learning outcomes is influenced by learning styles by 47.5% and is included in the strong category. In addition, the entrepreneurship learning outcome variable has a Q Square value of 0.332. This value indicates that the learning style variable has a predictive relevance to the entrepreneurship learning outcome variable of 0.332 with a moderate prediction.

#### *Hypothesis Test*

The relationship between respondent profiles with learning style variables, entrepreneurial learning outcomes, and career development is carried out using Chi-Square calculations as shown in Table 9.

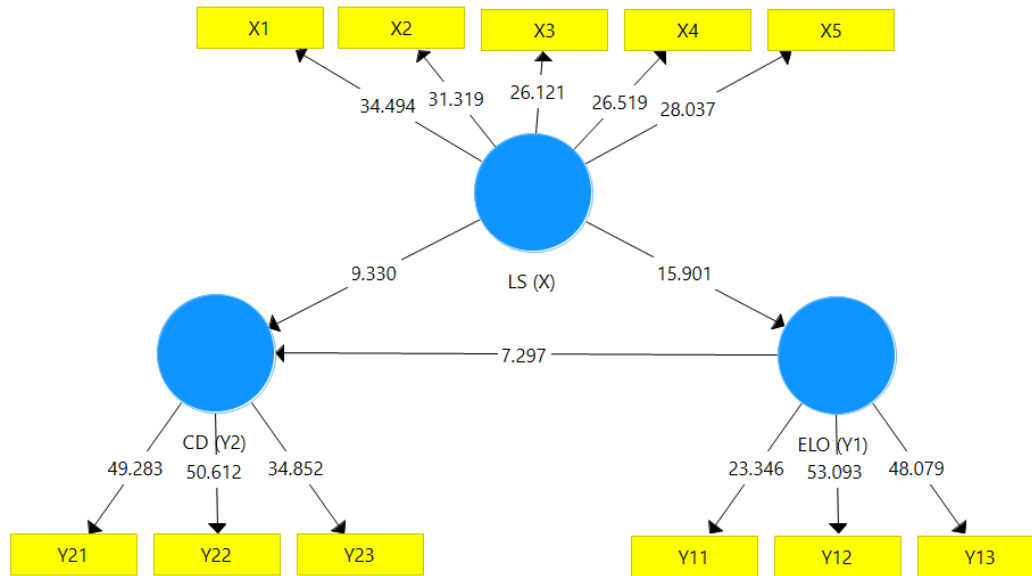
Table 9. Respondent Profile Relationship Closeness

Respondent Profile	Learning Style Chi <sup>2</sup> / P-value	Entrepreneurship Learning Outcomes Chi <sup>2</sup> / P-value	Career Development Chi <sup>2</sup> / P-value
Gender	4.321 / 0.364	2.660 / 0.616	3.474 / 0.482
Education	10.069 / 0.260	4.594 / 0.800	9.146 / 0.330
Path of Entry	13.980 / 0.104	8.677 / 0.370	10.911 / 0.207

From Table 9, the overall P-value > 0.05, it can be said that there is no significant relationship between the respondent's profile with learning styles, entrepreneurial learning outcomes, and career development.

To see the results of hypothesis testing research questions using the Bootstrapping technique on SmartPLS.

Figure 2. Bootstrapping Result (SmartPLS)



The significance of the results of testing the research hypothesis is seen from the T statistic value and P-value. If the T statistic value is  $> 1.96$  and P-Value  $< 0.05$  (Hair et al., 2021), the hypothesis is accepted, meaning that exogenous variables influence endogenous variables.

Tabel 10. Hypothesis Test

Path Analysis	Original Sample	T Statistics	P-Values	Hypothesis Result
LS (X) -> ELO (Y1)	0.689	16.340	0.000	H1 accepted
LS (X) -> CD (Y2)	0.494	9.040	0.000	H2 accepted
ELO (Y1) -> CD (Y2)	0.423	7.110	0.000	H3 accepted
LS (X) -> ELO (Y1) -> CD (Y2)	0.291	7.372	0.000	H4 accepted

The results of the hypothesis test in Table 12, show that all the independent variables tested have a significant effect on the dependent variable. It is evident from the T statistic that all of them have a value  $> 1.96$ . The learning style variable shows a significant effect on the learning outcomes of entrepreneurship with the original sample 0.689; T statistic 16,340  $> 1.96$ , and P-value 0.000  $< 0.05$ . These results indicate that apart from being significant, the influence of learning styles also has a positive direction.

The test results of the learning style path toward career development have an original sample value of 0.494, which means that learning styles have a positive effect on career development. Furthermore, the T statistic value of 9.040  $> 1.96$  and the P-value of 0.000  $< 0.05$  indicates that learning style has a significant effect on career development. Entrepreneurship learning outcomes on career development have an original sample value of 0.423, which means that entrepreneurial learning outcomes have a positive effect on career development. The statistical T value of 7.110  $> 1.96$  and

the P-value of  $0.000 < 0.05$  indicate that the learning outcomes of entrepreneurship have a significant effect on career development.

There is an indirect effect of learning style variables on career development through significant entrepreneurial learning outcomes. Therefore, the variable of entrepreneurship learning outcomes can act as mediation in influencing career development.

### **The Influence of Learning Style on Entrepreneurship Learning Outcomes**

Path analysis shows that the effect of learning style on entrepreneurial learning outcomes is obtained by a path coefficient of 0.689 with a significance value of less than 5%. Thus the accepted H1 indicates that learning style has a positive effect on entrepreneurial learning outcomes. The right and appropriate learning style will improve entrepreneurial learning outcomes (Ratten & Usmanij, 2021). Learning styles affect entrepreneurial learning outcomes in the 4.0 era (Sima, Gheorghe, Subić, & Nancu, 2020) which has a lot of competition. Therefore, students are not only good at academics but also must be good at seeing business opportunities to develop businesses, in this case, entrepreneurship. As is known, with the development of industry 4.0 and society 5.0 (Hidayat et al., 2021), students must have the ability to be able to work practically, be able to adapt to the environment, think positively, and master technology. All of these things cannot be separated from the learning style they use. The results of this study reveal that the better the learning style, the higher the student entrepreneurship learning outcomes. Learning styles can improve and see students' understanding of theory by paying attention to technological developments and directly broadly (Khamparia & Pandey, 2019).

### **The Influence of Learning Style on Career Development**

The influence of learning styles on career development is indicated by a path coefficient of 0.494 with a significance of less than 5%, meaning that H2 is accepted which states that learning styles have a positive effect on career development. The use of learning styles will be able to obtain the information needed to support one's career development (Nghia et al., 2019; Antelm-Lanzat et al., 2020). In this industrial era 4.0, there will be many new things to learn (Di Nardo, Forino, & Murino, 2020), skills to learn (Maisiri, Darwish, & van Dyk, 2019), and much more. By knowing the right learning style, you will be able to optimize your ability to learn new things and will elevate your career development to a better level (Seow, Pan, & Koh, 2019). Students must be able to master technology and keep up with industrial developments in the 4.0 era (Uygun, 2018). For this reason, students must maximize their learning style to find useful information for future success.

### **The Influence of Entrepreneurship Learning Outcomes on Career Development**

The results of the analysis show that the effect of entrepreneurship learning outcomes on career development is 0.423 with a significance value of less than 5%. This means that H3 is accepted, entrepreneurship learning outcomes have a positive effect on career development. Good entrepreneurial learning outcomes can enhance career development (Boldureanu et al., 2020; Wardana et al., 2020). The provision of entrepreneurship education in universities will foster an entrepreneurial spirit and courage in making decisions (Rodriguez & Lieber, 2020). From the results of entrepreneurship learning, students already know what opportunities are and make decisions about them (Esfandiar, Sharifi-Tehrani, Pratt, & Altinay, 2019). Students will

be able to open their jobs and not depend on others by paying attention to the development of industry 4.0 so that they can improve industrial development. The results of entrepreneurial learning will be able to foster interest in entrepreneurship (Li & Wu, 2019) so that it can reduce movement and development will be improved by continuing to learn new things.

### **The Influence of Learning Style on Career Development through Mediation of Entrepreneurship Learning Outcomes**

Through the mediation of entrepreneurial learning outcomes, learning styles have an effect on career development with a path coefficient of 0.291 and a significance value of less than 5%. Therefore, H4 is accepted, meaning that through mediating vocational learning outcomes, learning styles have a positive effect on career development. Mediation is partial because learning styles directly affect career development (Zhang et al., 2019; Yu et al., 2019). Good entrepreneurship learning outcomes will be able to improve one's career development by applying the right and appropriate learning style (Gatti et al., 2019; Ratten & Usmanij, 2021). Path coefficient mediating entrepreneurial learning outcomes the effect of learning styles on career development ( $\beta = 0.689$ ,  $p < 0.05$ ;  $\beta = 0.423$ ,  $p < 0.05$ ) is greater than the effect of learning styles on career development ( $\beta = 0.494$ ,  $p < 0, 05$ ). This means that a high learning style will improve entrepreneurship learning outcomes and career development.

The findings show that visual learning styles have the greatest influence among other learning styles in influencing entrepreneurial learning outcomes and career development, as seen from the outer loading of 0.830. Visual learning style is a learning style through sight (Aissaoui, El Madani, Oughdir, & Alliou, 2019; Chen et al., 2020) (eyes play an important role). Thus, in seeing something new, the learning process can be done visually in understanding and understanding something. Students with their visual learning style will prefer to use their eyesight to observe, demonstrate, and draw to find out the information they need. The information that will be obtained will be easier to understand apart from writing but also in the form of images. In addition, visual learning styles will be more interested in the presence of tables, lines, symbols, colors, pictures, diagrams, and others. So, they will prefer reading compared to listening to gathering information.

Everyone has their own learning style in understanding something depending on basic skills and personality (Jabarullah & Iqbal Hussain, 2019), which then develops along with experience and time (Papavlasopoulou, Giannakos, & Jaccheri, 2019). Learning styles are influenced by innate (natural) (Nancekivell, Shah, & Gelman, 2020) and environmental factors (Berková, Borůvková, Frendlovská, Krpálek, & Melas, 2020). That's why there are some things that are in a person that can't be changed even after going through training though. Learning style is how a student obtains information from the surrounding environment and then processes it into something new and useful. The choice of majors in education must also be adjusted to the student's learning style (Zamora-Polo, Sánchez-Martín, Corrales-Serrano, & Espejo-Antúnez, 2019), which will ultimately have an impact on success in pursuing education and success in later careers (Makarova, Aeschlimann, & Herzog, 2019). Various learning activities taken by students during the learning process will create a way of learning that becomes a habit in students' daily lives. The level of achievement will also vary for each student in understanding and absorbing information; there are slow, medium, and fast. Characteristics of learning styles will make learning effective for some people (Rodrigues, Almeida, Figueiredo, & Lopes, 2019) and will be ineffective for others

(Hong, Lee, & Ye, 2020; Miciak & Fletcher, 2020). Effectiveness in learning styles relates to the way students learn and the way they like it. The visual learning style focuses on vision (Huang, Luo, Yang, Lu, & Chen, 2020; Troussas, Krouska, Sgouropoulou, & Voyiatzis, 2020). Through the sense of sight, this learning style will help the learning process and gather evidence of information visually. Visual learning styles affect student entrepreneurship learning outcomes because with this learning style students will collect information by reading many references in developing their entrepreneurial talents and through other media will help in developing and adopting the business they are running so that their career development will continue to increase.

The findings in this study can be used as a reference in applying appropriate learning styles to develop and improve entrepreneurial learning outcomes and student career development. Lecturers can also apply some of the other learning styles found in this study not only to entrepreneurship learning outcomes but also to different subjects.

In this study, there are several limitations in collecting data, namely only in the electronics engineering department at the engineering faculty, Padang State University, so it may be a bit difficult to apply in other places. However, the findings in this study are expected to be used as a reference for further research. The findings of several factors, strengths, opportunities, challenges, and limitations when teaching in the electronics engineering department at Padang State University. The selection of the right learning style will be even better by paying attention to technological advances, especially the technological development of the industrial revolution 4.0. The researcher suggests looking at environmental factors and internship programs for further research that affects entrepreneurship learning outcomes and student career development.

## **CONCLUSION**

This study measures the influence of learning styles on improving entrepreneurial learning outcomes and career development. The results of the study indicate that learning styles have a direct effect on entrepreneurship learning and career development, entrepreneurship learning outcomes, and career development while learning outcomes for entrepreneurship learning styles and career development have positive and partial effects. Based on these findings, it can be said that entrepreneurship learning outcomes and career development can be improved through learning styles. The use of the right learning style will increase understanding and mastery of theory. Students must be able to develop the potential that exists within themselves by improving skills and seeking new information. The skills and information processing received will be able to provide good entrepreneurial learning outcomes and improve career development by applying the right learning style.

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## **AUTHOR CONTRIBUTION STATEMENT**

We did not find problems such as conflicts of interest in the implementation of this study. The author had participated in the research and approved the final version of the manuscript

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