



## Evaluation of the CSE-UCLA Model on Vocational High School Entrepreneurship Learning in Facing the Industry Era 4.0

**Sumarno**

Economic Education Study Program, FKIP, Universitas Riau

\*Corresponding Author. Email: [Sumarno.s@lecturer.unri.ac.id](mailto:Sumarno.s@lecturer.unri.ac.id)

**Abstract:** This study aims to analyze the effectiveness of entrepreneurship learning at vocational high schools in Pekanbaru, Riau in facing the industrial era 4.0. This study is an evaluation study using the CSE-UCLA model. The research was conducted at 6 public and 6 private vocational schools in Pekanbaru by presenting questionnaires, observations, interviews, and documentation. The data were analyzed descriptively and by comparison. The results of the study show that; 1) entrepreneurship learning at vocational high schools in Pekanbaru has not been effective from the aspect of entrepreneurship and the industrial era 4.0; 2) learning objectives do not include important entrepreneurial attitudes and the requirements of the industrial era 4.0 (leadership, independent, critical, creative, and innovative); 3) the implementation of entrepreneurship learning in general still has not carried out activities that create leadership, decision making, creativity, and innovation as well as flexibility of thinking; 4) entrepreneurial learning outcomes which is entrepreneurial knowledge competencies are generally still classified as lacking so that they do not support flexibility of thinking. 5) The entrepreneurial intention of vocational high school students in Pekanbaru is generally still low so there is no need for entrepreneurship challenges and the industrial era 4.0, namely live independently.

### Article History

Received: 07-09-2021

Revised: 22-10-2021

Accepted: 06-11-2021

Published: 11-12-2021

### Key Words:

Entrepreneurial Learning, Vocational High Schools, Industrial Era 4.0, CSE-UCLA.

**How to Cite:** Sumarno, S. (2021). Evaluation of the CSE-UCLA Model on Vocational High School Entrepreneurship Learning in Facing the Industry Era 4.0. *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, 7(4), 956-967. doi:<https://doi.org/10.33394/jk.v7i4.4118>



<https://doi.org/10.33394/jk.v7i4.4118>

This is an open-access article under the [CC-BY-SA License](https://creativecommons.org/licenses/by-sa/4.0/).



## Introduction

National development emphasizes the achievement of economic competitiveness based on natural resources and quality human resources. For this achievement, its strategic policies include, among others, improving the quality of human resources through strengthening entrepreneurship which includes patterns of entrepreneurship development and structuring entrepreneurship curriculum in formal educational institutions. In addition, it also develops vocational education to strengthen local innovation and creativity capabilities. Through Presidential Instruction No. 9/2016, Vocational High Schools were revitalized as an effort to improve the quality and competitiveness of Indonesian human resources. In the book on the revitalization of vocational education, it is stated that vocational education must be able to prepare graduates who are ready to work professionally and/or capable of entrepreneurship to move the nation's development towards equitable and prosperous society. Especially in the industrial era 4.0 which requires education to build individual and team innovation practices or empower students to produce innovations because the industry views graduate as colleagues and entrepreneurs (entrepreneurs) producing sustainable innovation (Harkins, 2008).

Surprisingly, data from the Central Statistics Agency for Riau Province (2018) shows that the highest open unemployment rate in Riau Province comes from vocational high school

**Jurnal Kependidikan** Vol. 7, No. 4 (December 2021)



graduates, both conditions in August 2016 (15.80%), August 2017 (10, 86%), and August 2018 (10.66%). Although there was a decline in 2017 and 2018, compared to other types and levels of education, the unemployment rate for Vocational High Schools graduates is still the highest. The Central Statistics Agency for Riau Province also informed that unemployment in urban areas was higher than in rural areas, namely in August 2016 in urban areas by 9.25% while in rural areas it was only 6.20%; in August 2017 9.25% in urban areas in rural areas even only 4.20%; Likewise, in August 2018, in urban areas it was still higher at 8.87% while in rural areas it was 4.41%. On the other hand, Indonesian entrepreneurs are only 3.1 percent of the workforce; while the percentage of developed countries is quite high, namely Singapore 7 percent, China 10 percent, Japan 11 percent, and the United States 12 percent. According to Siswono Yudo Husodo (General Chair of the Pancasila University Foundation), Indonesian entrepreneurs are still few to be able to become a developed country; as evidenced by the current account deficit, because many goods are still imported, due to the lack of entrepreneurs producing goods (Tim Viva, 2018). According to him, the rapid progress of a country requires the presence of entrepreneurs in good quantity and quality. So that vocational high school graduates can become competitive and qualified human beings and can become more entrepreneurs, it is necessary to develop entrepreneurship in Vocational High Schools, especially in Pekanbaru.

To become an entrepreneur, there is a process that occurs. Referring to the entrepreneurial process model from Bygrave, (Suryana, 2013) reveals that entrepreneurship develops and begins with innovation; innovation is influenced by various internal factors (factors from individuals) such as locus of control, tolerance, values, education, experience; and external (factors from outside the individual) such as opportunities, resources, role models, activities, incubators, parents/family, group networks, government policies. But if you look at the nature of entrepreneurship as expressed by Suryana above, actually the entrepreneurial process starts from creativity, namely the result of thinking in the form of new ideas, ideas, or plans that are different from existing/other ones. According to (Prawirokusumo, 2010), the entrepreneurial process is needed to start a new business or a new entrepreneur; even according to him, to become a great entrepreneur, the entrepreneurial process starts from the existence of a locus of control, as he expressed that internal and external factors shape the locus of control, creativity, innovation, implementation, and growth which then develops into a great entrepreneur. born, but rather through their life experiences (Raposo & Paço, 2011). Life experience can be manipulated through education, so that entrepreneurship can be formed through education. This is in line with the opinion (Alma, 2010) that entrepreneurship can be taught.

With regard to entrepreneurship education, (Rasmussen et al., 2015) reveals that entrepreneurship education is the content, methods, and activities that support the development of motivation, competence, and experience that make it possible to implement, manage, and participate in the value-adding process. This understanding emphasizes the components of entrepreneurship education which include materials, methods, and activities, as well as goals in the form of developing motivation, competence, and skills to provide added value to something. Another understanding is expressed by (Fayolle, 2009), where according to him entrepreneurship education is all activities intended to foster entrepreneurial mindsets, attitudes and skills and include a series of aspects, namely generating ideas, starting a business, growth and innovation. This understanding includes activity components aimed at the entrepreneurial process, namely starting from fostering entrepreneurial mindsets and attitudes as well as entrepreneurial skills so that they can generate business ideas, then starting a business and developing it through innovation. The growth of mindsets and



attitudes in entrepreneurship education is extended to the need for courage to act, as expressed in terms of entrepreneurship education according to the Center for Entrepreneurial Leadership Clearinghouse on Entrepreneurship Education (Handrimurtjahjo, 2013), that entrepreneurship education is the process of providing individuals with the concepts and skills to recognize opportunities that others have overlooked, and to have the insight, self-respect and knowledge to act where others have hesitated. (Sumarno et al., 2018) revealed that entrepreneurship education is defined as content, methods, and activities to develop mindsets, attitudes, motivations, knowledge, skills, and entrepreneurial experience, so that individuals are able to find business ideas to seize opportunities, start business, and develop businesses that can provide added value for themselves and or others. From the understanding of entrepreneurship education stated above, it can be stated that entrepreneurship education is all contents, methods, and activities that provide individual experience and support the development of entrepreneurial mindsets, attitudes, motivations, knowledge, and skills, so that individuals are able to generate business ideas. to seize opportunities, start businesses, and develop them to provide added value for themselves and/or others.

Some experts such as (Gibb, 2008); (Pittaway & Cope, 2007); (Pittaway & Edwards, 2012); argues that entrepreneurship education is learning “about” entrepreneurship, learning “for” entrepreneurship, and learning “through” entrepreneurship. Learning “about” entrepreneurship, emphasizes raising awareness or sharing knowledge, in learning “for” concerns to enable students to acquire key competencies and skills, whereas in learning “through”, students are directed to run a real company (Seikkula-Leino et al. , 2015). The main objective of entrepreneurship education is to develop entrepreneurial competencies that include knowledge, skills, and attitudes that affect the willingness and ability to engage in entrepreneurship (Lackeus, 2015). Furthermore, it is mentioned that entrepreneurship education must address the nature of business entry, for that, it must include building negotiation skills, leadership, new product development, creative thinking and exposure to technological innovations, including, importantly, awareness of entrepreneurial career options.

Shapiro through The Consortium for Entrepreneurship Education, Ohio, (2004), put forward a model of entrepreneurship education which he called the "Lifelong Learning Model". The model consists of five stages and assumes that everyone in the education system should have the opportunity to learn at an early stage, then at a later stage aimed at who might specifically become entrepreneurs. The stages in this model are: *Stage 1. Basic*. The first stage focuses on a fundamental understanding of the basics of free market and economics, identifying career opportunities and the need to master basic skills to be successful in a free market economy. The expected result at this stage is the emergence of learning motivation and sensitivity to business opportunities. *Stage 2. Competency Awareness*. Students will learn the language of business, see problems from the business owner's point of view and discover entrepreneurial competencies. This is especially important in engineering careers and education. *Stage 3. Creative Applications*. At these stage students take the time to find business ideas and various ways to plan a business. Students must acquire deep and broad knowledge compared to the previous stages. This stage encourages students to create unique business ideas and carry out the decision-making process through a business plan. The best programs allow students to actually experience the operational aspects of business. The expected result is that students learn to be entrepreneurs and practice business processes. *Stage 4. Start-Up*. At these stage students need technical assistance to realize their business ideas/plans. A community education program is needed that focuses on helping business start-ups. *Stage 5. Growth*. At this stage, students can develop existing businesses and are



able to solve business problems effectively. So that students need further education programs can be in the form of seminars or workshops.

The results of the study (Sumarno & Suarman, 2017) reveal that student entrepreneurship education still needs to be coordinated and integrated from various aspects. One important aspect of entrepreneurship education is student intake. Related to that, namely with regard to entrepreneurial knowledge and experience received in previous education. Therefore, it is necessary to develop entrepreneurship education in Vocational High Schools. In addition to being an input for student entrepreneurship in higher education, it is important to develop entrepreneurship education in vocational schools because school graduates will become a workforce that is expected to be able to fill the workforce needs and create jobs like themselves.

Sumarno, Gimin, Haryana, & Saryono (2018) reveal that entrepreneurship education needs to be clearly designed to achieve goals. The purpose of entrepreneurship education in Vocational Schools is clearly stated by (Directorate of Vocational Development, 2019), that the Entrepreneurship Learning Development Program in Vocational Schools must be an alternative in preparing graduates who are able to create their own jobs. To be able to create their own jobs, students need to acquire the skills demanded by life in the industrial era 4.0 or the 21st century, namely communication, collaboration, critical thinking, problem solving creativity, adaptation, leadership, decision making, innovation, and flexibility of thinking knowledge (Sumarno & Gimin, 2019); (Luthansa, 2020). (González-salamanca et al., 2020). For this reason, current entrepreneurship learning needs to be studied for its effectiveness because effective learning is a determinant of effective schools (Botha & Makoelle, 2012). Effectiveness has a broad meaning, including with regard to accuracy and also performance or results (Tatlah & Iqbal, 2012). According to Westbrook et al., (2013) learning effectiveness is defined as teaching and learning activities that make some observable changes in students, leading to greater student engagement and understanding. Effective learning in principle can only be carried out by effective teachers, who will provide positive academic and social outcomes for students (Starrett, 2015). Therefore, teacher competence is important for the implementation of an effective learning process (Hadam et al., 2017). Effective learning in vocational schools can be seen from how far the school can enable each individual student or graduate to capitalize on his intentions, knowledge and skills at the highest level. To be able to develop entrepreneurship at Vocational High School in Pekanbaru more effectively, it is necessary to study vocational entrepreneurship learning. The problem that needs to be answered is "How is the effectiveness of vocational entrepreneurship learning in Pekanbaru in facing the industrial era 4.0 seen from learning plans, learning implementation, and learning outcomes of knowledge and intention in entrepreneurship?"

This study aims to reveal the effectiveness of vocational entrepreneurship learning in Pekanbaru in relation to the demands of 21st century skills or the industrial era 4.0. It is important to be able to look at existing vocational entrepreneurship learning and efforts to develop it in order to reduce unemployment (especially Vocational High School graduates) and increase the number of entrepreneurs who are more and more professional.

## **Research Method**

This research is an evaluation study using the CSE-UCLA (Center for the Study of Evaluation - University of California in Los Angeles) model as has been used in various evaluation studies of educational or learning programs (Putu Semadi et al., 2019); (Andriani, 2015); (Kusmanto et al., 2014). Through this model, the effectiveness of entrepreneurship





learning is assessed through the lesson plans prepared by the teacher, the implementation of learning, and the learning outcomes.

This research was conducted in Pekanbaru, Riau, Indonesia with the research sample taken purposively with the criteria for the results of the 2018 National Competency Examination in the upper, middle, and low groups. Each group was taken as many as 4 (four) Public and Private Vocational High Schools, so that the number of samples was 12 Vocational High School. Each school is taken 3 (three) classes, namely Class X, XI, and XII as student respondents. Research data were collected through observation techniques, giving questionnaires, interviews, and documentation. Observations and interviews were used to collect data on the implementation of entrepreneurship education, while questionnaires were used to collect data on students' intention in entrepreneurship. Documentation technique to collect data on entrepreneurship learning objectives and student entrepreneurship learning outcomes. The research data collected were analyzed using descriptive analysis techniques. The effectiveness of learning in this study was assessed in terms of the effectiveness of learning planning, the effectiveness of the learning process, and the effectiveness of the learning outcomes obtained by students. The effectiveness of learning planning is measured through indicators of Learning Objectives and Learning Activity Plans. The effectiveness of the learning process is measured through indicators of preliminary activities, core activities, and closing activities. The effectiveness of learning outcomes is measured through indicators of students' knowledge and intention in entrepreneurship. To get an idea of the level of effectiveness of the learning plan, the learning objectives and activity plans contained in the lesson plan are compared with the standard for preparing learning objectives and activity plans; The level of effectiveness of the implementation of learning is analyzed by comparing the average actual score with the average ideal score. The effectiveness of learning outcomes was analyzed by comparing the knowledge test scores with the Minimum Completeness Criteria and comparing the actual scores of students' intention in entrepreneurship with their ideal scores.

## **Results and Discussion**

### **Planning of Entrepreneurship Learning**

Vocational entrepreneurship learning in Pekanbaru is programmed through Creative Products and Entrepreneurship Subjects with a learning time of 8 hours a week, and already has learning tools as a learning plan. The learning tools prepared by the teacher generally consist of a Learning Implementation Plan, Student Worksheets, Learning Resources, and Assessments. The lesson plans prepared by teachers generally only reveal complete Core Competencies (KI), namely Attitudes (KI-1 and 2), Knowledge (KI-3), and Skills (KI-4). Basic Competencies (KD) have also been prepared in full according to KI. However, many of the learning objectives are only arranged for aspects of knowledge and skills, while aspects of attitude are not disclosed. Some even did not reveal aspects of their attitudes and skills in the learning objectives section. However, there are attitude assessment instruments that are disclosed in the Assessment Section. The non-disclosure of the attitude aspect in the learning objectives makes the entrepreneurial attitude that should be instilled and developed in students is not created optimally, even tends to be neglected. The attitude that is assessed is actually a general attitude that is widely developed by other subjects. Although there are general attitudes that are also needed for entrepreneurial attitudes such as team building attitudes, responsibility, integrity, and commitment, but if they are not expressed and developed explicitly in entrepreneurship learning, these attitudes can have less entrepreneurial meaning (Fitriati & Hermiati, 2011).



In addition to the problem of the attitude aspect in the learning objectives section, the knowledge and skill aspects are also still not optimally developed for the development of students' entrepreneurial potential. The problem in the aspect of knowledge is that the level of student knowledge competence which is the learning goal is still at a low to medium level. High-level knowledge competencies, especially knowledge level 5 (C5) that is analyzing, and level 6 (C6) that is creating, have not appeared in the learning objectives. Besides being detected from the expression of the content of the learning objectives, the low-level knowledge competence was also revealed from the knowledge assessment instrument. The points of the student's knowledge competency assessment have not yet reached the meaning of analyzing or creating something that utilizes the knowledge taught/learned in the learning. The absence of learning objectives that reveal students' high-level knowledge competencies has made students' abilities to analyze problems in their daily lives and their environmental life unable to be developed properly. This can result in students not being able to analyze business opportunities that exist in their environment (Raposo & Paço, 2011). As a further consequence, students are not yet able to explore ideas or business ideas because they do not have creative competence (Lackéus, 2015). Whereas creativity is the core of entrepreneurship (Usman et al., 2010); (Morris et al., 2013); (Prochazkova, 2015). If students do not have creative competence, the skills to think and act creatively cannot be realized. This can make students/graduates only think about looking for work, not thinking about creating jobs. This shows that the competencies to be achieved in learning planning have not been able to anticipate the demands of abilities in the industrial era 4.0 which include critical thinking, problem-solving creativity, innovation, and flexibility of thinking knowledge (Sumarno & Gimin, 2019); (Luthansa, 2020). (González-salamanca et al., 2020).

The learning activity plan contained in the lesson plans in a narrative manner already includes a scientific approach, which includes observing, asking questions, gathering information/testing, reasoning/associating, and communicating/concludes. But the tendency of the content of the activities is still patterned on learning that has not been constructive. For example, the element of reasoning/associating is poured in the form of identifying the type of something that already exists in the student's reading material. Although it has shown the existence of reasoning/associating activities, the meaning of these activities is not in accordance with the demands and developmental levels of vocational students, especially for entrepreneurship learning. Likewise for activities in other elements, the meaning contained is still limited to seeking and gaining knowledge through less active activities. From all these activities, it shows that the learning plans prepared by vocational high school teachers in Pekanbaru have not been effective. One of the characteristics of effective learning is a lesson plan (Devlin & Samarawickrema, 2010); (Ryans, 2016); (Hofmeister, 2017).

### **Implementation of Entrepreneurship Learning**

In accordance with the plan as described in section 4.1. above, where the objectives and assessment of the knowledge aspect are still at a low level, the implementation of Creative Products and Entrepreneurship Subjects learning in general also only emphasizes the ability to remember and understand (low-level knowledge; C1, C2, C3), not the ability to apply knowledge (middle-level knowledge; C4), especially analytical and creative skills (high level knowledge; C5 and 6). Lack of attention to aspects of knowledge, especially high-level knowledge can make students unable to innovate (Usman et al., 2016).

The results of observing the implementation of Creative Products and Entrepreneurship Subjects learning at vocational high school in Pekanbaru indicate that according to the aspect of the main activity, the closing activities of the learning are classified

as good. However, the Preliminary Activities and the Core Learning Activities are still classified as Poor. In general, the implementation of Creative Products and Entrepreneurship Subjects learning can be said to be still classified as Poor. In the implementation of the closing learning activities, there are no sub-aspects, but directly to the activity items consisting of four items, namely 1) Reflecting or making summaries by involving students; 2) Giving oral or written tests, 3) Collecting work results as portfolio material, 4) Carrying out follow-up by providing directions for the next activity or enrichment task. All of these items scored in the good category. For items giving tests, at first glance they are not in line with the results of activities related to the assessment of C4, 5, and 6 that have not been reached by the teacher. The two things are different. Indeed, the activity of giving the test was good, but the content of the test did not contain the test for intermediate or high level knowledge. As a result, from the point of view of the activity in giving the test, it was good, but from the content of the test, it was not good. The results of observations of the implementation of learning can be presented in Table 1 below.

**Table 1. Results of Observation of the Implementation of Learning for Creative Products and Vocational Entrepreneurship Subjects in Pekanbaru**

No	Aspects Observed	Number of Items	Average Score
<b>A</b>	<b>PRELIMINARY ACTIVITIES</b>	<b>6</b>	<b>2,51</b>
1	Apperception and Motivation	4	2,17
2	Submission of Competencies and Activity Plans	2	3,21
<b>B</b>	<b>CORE ACTIVITIES</b>	<b>30</b>	<b>2,56</b>
1	Mastery of Study Materials	4	2,40
2	Application of Educational Learning Strategies	7	2,57
3	Application of Scientific Approach	7	2,50
4	Utilization of Learning Resources/Media in Learning	5	2,25
5	Involvement of Students in Learning	5	2,83
6	Correct and Appropriate Use of Language in Learning	2	3,13
<b>C</b>	<b>CLOSING ACTIVITIES</b>	<b>4</b>	<b>3,04</b>
1	Learning Closure	4	3,04
	<b>TOTAL</b>	<b>40</b>	
	<b>AVERAGE</b>		<b>2,70</b>

Although the aspects of the Preliminary Activities and aspects of the Core Activities are generally classified as Poor, but when viewed from the sub-aspects there are already implemented well. In the preliminary activities, the sub-aspects of activities convey competence and the general plan of learning activities is good. The sub-aspect consists of two activity items, namely 1) Delivering the abilities that will be achieved by students, and 2) Delivering activity plans, for example, individual, group work, and making observations. Both items of activity have indeed been carried out well. In the activity item "Delivering the abilities that will be achieved by students" the results are good. It is also identical to the problem in the activity item giving a test on the aspect of closing the learning activity. Activities convey the abilities that will be achieved by students with regard to conveying learning objectives. Although the scope of the content of the learning objectives is classified as inadequate, the teacher's activities in conveying these objectives are classified as good.

Aspects of core activities include six sub-aspects, namely: 1) Mastery of Subject Matter, 2) Application of Educational Learning Strategies, 3) Application of Scientific Approaches, 4) Utilization of Learning Resources/Media in Learning, 5) Involvement of Students in Learning, and 6) Correct and Appropriate Use of Language in Learning. Of the



six sub-aspects, only one sub-aspect has a good implementation, namely the sub-aspect of Using Correct and Appropriate Language in Learning. The implementation of the other five sub-aspects is still not good enough. If you look closely, the sub-aspects that have been implemented well are not related to the substance of entrepreneurship because they only relate to the language used by the teacher in the learning process.

Five sub-aspects of core activities whose implementation is still classified as poor turn out to have substantive meaning for entrepreneurship learning. The sub-aspect of material mastery is very clear as the core substance in entrepreneurship learning (Gautam & Kumarn, 2015). Mastery of the teacher's material will affect the knowledge conveyed by the teacher to students; which ultimately affects the knowledge competence of students. The sub-aspects of implementing learning strategies that educate are very meaningful for the substance of entrepreneurship learning because they contain activity items in the form of 1) Implementing learning according to the competencies to be achieved, 2) Facilitating activities that contain components of observing, interacting, communicating, and reflecting, 3) Implementing learning contextual in nature, and 4) Implement learning that allows the growth of positive habits. These items relate directly or very closely to entrepreneurial attitudes such as interacting, communicating, caring/responsive to problems or opportunities in the existing environment (contextual), as well as positive habits. This means that the sub-aspects of implementing educational learning strategies are very necessary for the formation and development of values, attitudes, and entrepreneurial spirit. The same thing happened in the sub-aspects of applying the scientific approach. This approach is directed to student activities which include observing, asking, trying, associating, and communicating. The scope is clearly very important to elaborate and develop the entrepreneurial potential of students more optimally, because one of the entrepreneurial skills is the ability to communicate (Oosterbeek et al., 2010); (Nasr & Boujelbene, 2014). The sub-aspect of student involvement in the learning process describes how far students are activated in the learning process in order to understand in depth what is being learned. Such a process is very important for inculcating and developing entrepreneurial attitudes and skills (Yin & Wang, 2017). The importance of these sub-aspects explains that if the implementation of the sub-aspects of learning activities is not good or not good, it will certainly result in not optimal achievement of student entrepreneurial competencies. In addition, the demands for the skills of the industrial era 4.0 in the form of communication, collaboration, critical thinking, problem-solving creativity, innovation, and flexibility of thinking knowledge have also not been realized.

### **Entrepreneurship Learning Outcomes**

Entrepreneurship learning outcomes revealed in this study consist of entrepreneurial knowledge and entrepreneurial intentions. Each of these results can be expressed as follows. The results of entrepreneurial knowledge that can describe the knowledge competence of Vocational High School students in Pekanbaru are generally still classified as lacking. This is indicated by the number of students whose test scores <76 reached 68.20%, and the average overall score of students was 68.75 which was still below the Minimum Completeness Criteria of 76.00. This is supported by the results of the one-sample difference test with a test value of 76 which shows a significant difference in the 5% significance level. Although in general the competence of students' entrepreneurial knowledge is classified as lacking, there are already 31.80% of students who can be said to be competent or have entrepreneurial knowledge competence. If students who already have entrepreneurial knowledge competencies are distributed in the categories of Enough, Good, and Very Good competencies, each of these categories has a percentage of 19.70%, 11.10%, and 1.00%. The



percentage of the number of students who already have entrepreneurial competence turns out to be the largest in the Enough category, which amounts to 19.70%. The complete distribution of student knowledge competencies can be presented in Table 2. below.

**Table 2. Frequency Distribution of Entrepreneurship Knowledge Competencies of Vocational High School Students in Pekanbaru.**

Category and Score Interval	Frequency	Percentage	Cumulative Percentage
Very Good= 93-100	14	1,00	1,00
Good= 84-92	159	11,10	12,10
Enough= 76-83	281	19,70	31,80
Not Enough= <76	973	68,20	100,00
<b>Total</b>	<b>1.427</b>	<b>100,00</b>	

The large percentage of students' knowledge competence in the not enough category illustrates that students' entrepreneurial knowledge competence is still lacking. The knowledge competence of students who are still classified as lacking indicates that the learning has not been effective (Hadam et al., 2017). This is in line with (Little et al., 2009) dan (Nasr & Boujelbene, 2014) which reveal that the lack of student knowledge shows that their learning is not yet effective, because the effectiveness of teacher learning can be measured from the success of students. Lack of entrepreneurial knowledge will make students unable to search for business opportunities optimally because through knowledge, students can develop new business opportunities through creative and critical thinking (Lee et al., 2006); (Raposo & Paço, 2011); (Lackéus, 2015). This can be interpreted that the lack of knowledge of students will make graduates potentially unemployed because they cannot create job opportunities for themselves or get jobs from other parties.

The learning outcomes of entrepreneurial intentions, seen from the average score in general, are also classified as low. This is indicated by the average real score of 29.02 which is lower than the average ideal score (30.00). This is also supported by the results of the one-sample difference test with a test value of 30 which shows a significant difference at the 5% significance level. Although based on the average score in general, students' intention in entrepreneurship is still relatively low, but categorically, most of the students (47.50%) are in the Medium category. The number of students in this category is slightly smaller than the number in the Low and Very Low categories which are 47.20%.

**Table 3. Frequency Distribution of Entrepreneurial Intention of Vocational High School Students in Pekanbaru.**

Category and Score Interval	Frequency	Percentage	Cumulative Percentage
Height= 39-48	75	5,30	5,30
Medium= 30-38	678	47,50	52,80
Low= 21-29	489	34,30	87,00
Very Low= 12-20	185	13,00	100,00
<b>Total</b>	<b>1.427</b>	<b>100,00</b>	

The low intention in entrepreneurship of Vocational High School students in Pekanbaru also indicates the ineffectiveness of entrepreneurship learning because entrepreneurship learning contributes to entrepreneurial intention (Wahyuningsih, 2020); (Barba-sánchez & Atienza-sahuquillo, 2018); (Sagar, 2015); (Bae et al., 2014); (Winarno, 2009) and is said to be effective if it can enable each individual to capitalize on his intentions at the highest level



(Hadam et al., 2017). The low entrepreneurial intention of students seems to have something to do with students' low entrepreneurial knowledge. This is because knowledge affects entrepreneurial intention (Khuong & An, 2016); (Kusuma & Warmika, 2016); (Pujiastuti & Filantrovi, 2018). Likewise (Lee et al., 2006) which revealed that students' intention in entrepreneurship is related to entrepreneurial knowledge.

### Conclusion

Based on the results obtained in this study, conclusions can be drawn: 1) entrepreneurship learning at the Vocational High School in Pekanbaru has not been effective in terms of entrepreneurship and the industrial era 4.0; 2) the objectives of entrepreneurship learning do not include the demands of entrepreneurial attitudes and skills as well as the industrial era 4.0 (leadership, responsibility, independent, critical, creative, and innovative); 3) the implementation of entrepreneurship learning in general still has not carried out activities that create leadership, decision making, creativity, and innovation as well as flexibility of thinking; 4) entrepreneurial learning outcomes in the form of entrepreneurial knowledge competencies are generally still relatively lacking so that they do not support flexibility of thinking. 4) The entrepreneurial intention of Vocational High School students in Pekanbaru in general is still relatively low so it has not met the demands of entrepreneurship and the industrial era 4.0 which is live independently.

### Recommendation

To improve entrepreneurship learning more effectively and optimally, this study proposes suggestions to: 1) schools, so that: a) complete entrepreneurial activities at least in accordance with the entrepreneurship program developed through the Directorate of Vocational Development of the Ministry of Education and Culture, b) guide/guide teachers in preparing and implementing entrepreneurial learning for a more comprehensive entrepreneurial purpose. 2) teachers, to: a) develop their professional and pedagogical competencies according to the demands of the competence needs of students, graduates, and also the community, and b) put more emphasis on practices for developing high-level knowledge so that the core of entrepreneurship in the form of creativity and innovation can be achieved. 3) the education office/Kemendikbudristek, in order to: a) improve the competence of teachers through education/training, b) optimize the cooperation of schools and the business world in collaborative learning of teachers and practitioners.

### References

- Andriani, S. (2015). Evaluasi CSE-UCLA Pada Studi Proses Pembelajaran Matematika. *Al-Jabar: Jurnal Pendidikan Matematika*, 6(2), 167–176. <https://doi.org/10.24042/ajpm.v6i2.46>
- Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The Relationship Between Entrepreneurship Education and Entrepreneurial Intentions: A Meta-Analytic Review. *Entrepreneurship Theory and Practice*, 38(2), 217–254. <https://doi.org/10.1111/etap.12095>
- Barba-sánchez, V., & Atienza-sahuquillo, C. (2018). Entrepreneurial intention among engineering students: The role of entrepreneurship education. *European Research on Management and Business Economics*, 24(1), 53–61. <https://doi.org/10.1016/j.iedeen.2017.04.001>



- Devlin, M., & Samarawickrema, G. (2010). *The criteria of effective teaching in a changing higher education context*. 29(2), 111–124. <https://doi.org/10.1080/07294360903244398>
- Fitriati, R., & Hermiati, T. (2011). Entrepreneurial Skills and Characteristics Analysis on the Graduates of the Department of Administrative Sciences, FISIP Universitas Indonesia. *BISNIS & BIROKRASI: Jurnal Ilmu Administrasi Dan Organisasi*, 17(3), 262–275. <https://doi.org/10.20476/jbb.v17i3.788>
- Gautam, M. K., & Kumarn, S. S. (2015). Entrepreneurship Education: Concept, Characteristics and Implications for Teacher Education. *Shaikshik Parisamvad (An International Journal of Education)*, 5(1), 21–35.
- González-salamanca, J. C., Agudelo, O. L., & Salinas, J. (2020). Key competences, education for sustainable development and strategies for the development of 21st century skills. A systematic literature review. *Sustainability (Switzerland)*, 12(24), 1–17. <https://doi.org/10.3390/su122410366>
- Hadam, S., Rahayu, N., & Ariyadi, A. N. (2017). *STRATEGI IMPLEMENTASI REVITALISASI SMK* (M. Bakrun, M. Soleh, N. Widyani, S. P. Lestari, C. Widjanti, A. L. Razik, Widarto, & I. Ismara (eds.); I). Direktorat Pembinaan Sekolah Menengah Kejuruan Direktorat Jenderal Pendidikan Dasar dan Menengah Kementerian Pendidikan dan Kebudayaan.
- Harkins, A. M. (2008). Leapfrog Principles and Practices: Core Components of Education 3.0 and 4.0. *Futures Research Quarterly*, 24(1), 1–15.
- Hofmeister, J. (2017). *Characteristics of Effective Teachers*. <https://Sde.Ok.Gov/Criteria-Evaluation-Effective-Teaching-and-Administrative-Performance>.
- Khuong, M. N., & An, N. H. (2016). The Factors Affecting Entrepreneurial Intention of the Students of Vietnam National University — A Mediation Analysis of Perception toward Entrepreneurship. *Journal of Economics, Business and Management*, 4(2). <https://doi.org/10.7763/JOEBM.2016.V4.375>
- Kusmanto, A. S., Sugiharto, D. Y. P., & Sugiyono. (2014). THE DEVELOPMENT OF EVALUATION PROGRAM MODEL GUIDANCE AND COUNSELING SERVICE BASED ON CSE-UCLA OF JUNIRO HIGH SCHOOL IN KUDUS. *Jurnal Bimbingan Konseling*, 3(1).
- Kusuma, M. W. A., & Warmika, I. G. K. (2016). ANALISIS FAKTOR-FAKTOR YANG MEMPENGARUHI INTENSI BERWIRAUSAHA PADA MAHASISWA S1 FEB UNUD. *E-Jurnal Manajemen Unud*, 5(1), 678–705.
- Lackéus, M. (2015). *Entrepreneurship In Education: what, why, when, how* (Issue c). <https://doi.org/10.15713/ins.mmj.3>
- Lee, S. M., Lim, S., & Pathak, R. D. (2006). Influences on students attitudes toward entrepreneurship: A multi-country study. *Entrepreneurship Mgt.*, 2, 351–366. <https://doi.org/10.1007/s11365-006-0003-2>
- Little, O., Goe, L., & Bell, C. (2009). *A PRACTICAL GUIDE to Evaluating Teacher Effectiveness* (Issue April). The National Comprehensive Center for teacher Quality.
- Luthansa, N. (2020). *10 Kemampuan yang Harus Dimiliki di Era Revolusi Industri 4.0*. <https://doi.org/https://web.bapelkessemarang.id/artikel/10-kemampuan-yang-harus-dimiliki-di-era-revolusi-industri-4-0/>
- Morris, M. H., Webb, J. W., Fu, J., & Sujata, S. (2013). A Competency-Based Perspective on Entrepreneurship Education: Conceptual and Empirical Insights. *Journal of Small Business Management*, 51(3), 352–369. <https://doi.org/10.1111/jsbm.12023>



- Nasr, B. K., & Boujelbene, Y. (2014). Assessing the impact of entrepreneurship education. *Procedia - Social and Behavioral Sciences*, 109, 712–715. <https://doi.org/10.1016/j.sbspro.2013.12.534>
- Oosterbeek, H., Á, M. V. P., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills. *European Economic Review*, 54(3), 442–454. <https://doi.org/10.1016/j.euroecorev.2009.08.002>
- Prochazkova, P. T. (2015). VARIOUS PERSPECTIVES ON ENTREPRENEURSHIP EDUCATION: EMERGING TRENDS IN ENTREPRENEURSHIP SUPPORT. *Business Trends*, 5(2), 28–36.
- Pujiastuti, Y., & Filantrovi, E. W. (2018). GAMBARAN MINAT KEWIRAUSAHAAN MAHASISWA ( Studi terhadap Mahasiswa STIE Bank BPD Jateng ). *JURNAL MANAJEMEN*, 15(2), 169–180. <https://doi.org/https://doi.org/10.25170/jm.v15i2.473>
- Putu Semadi, I. G., Dantes, N., & Sri Mertasari, N. M. (2019). Studi Evaluatif Berbasis Model Cse-Ucla Tentang Pelaksanaan Program Pendidikan Bintara Di Sekolah Polisi Negara Polda Bali. *Jurnal Penelitian Dan Evaluasi Pendidikan Indonesia*, 9(2), 89–105. <https://doi.org/10.23887/jpepi.v9i2.2899>
- Raposo, M., & Paço, A. (2011). *Entrepreneurship education: Relationship between education and entrepreneurial activity*. 23(2011), 453–457.
- Ryans, D. G. (2016). The Criteria of Teaching Effectiveness. *The Journal of Educational Research*, 42:9, 690-699, 42(9), 690–699. <https://doi.org/10.1080/00220671.1949.10881737>
- Sagar, H. (2015). *Entrepreneurial Learning Environments and A Change Role For Teachers*.
- Sumarno, S., & Gimin, G. (2019). Analisis Konseptual Teoretik Pendidikan Kewirausahaan Sebagai Solusi Dampak Era Industri 4.0 Di Indonesia. *JURNAL PENDIDIKAN EKONOMI: Jurnal Ilmiah Ilmu Pendidikan, Ilmu Ekonomi Dan Ilmu Sosial*, 13(2), 1. <https://doi.org/10.19184/jpe.v13i2.12557>
- Usman, H., Mulyani, E., Suharyadi, Sejati, V. S., Sistaningrum, W., Winarno, G., Gunawan, A. S., Priyono, S. A., Kartini, Setyowati, I., & Wulandari, A. (2010). *PENGEMBANGAN PENDIDIKAN KEWIRAUSAHAAN*. Pusat Kurikulum, Badan Penelitian dan Pengembangan Kementerian Pendidikan Nasional. <https://doi.org/http://staffnew.uny.ac.id/upload/130683974/lainlain/Pengembangan%200%20Pendidikan%20Kewirausahaan.pdf>
- Usman, H., Raharjo, N. E., & V. Lilik, H. (2016). *MODEL PEMBELAJARAN PENDIDIKAN KEJURUAN MASA DEPAN*. PUSAT KURIKULUM DAN PERBUKUAN Badan Penelitian dan Pengembangan Kementerian Pendidikan dan Kebudayaan.
- Wahyuningsih, R. (2020). Pengaruh Pendidikan Kewirausahaan dan Lingkungan Keluarga Terhadap Minat Berwirausaha Mahasiswa STKIP PGRI Jombang. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, 6(3), 512-521. <https://doi.org/10.33394/jk.v6i3.2874>
- Winarno, A. (2009). Pengembangan Model Pembelajaran Internalisasi Nilai-Nilai Kewirausahaan pada Sekolah Menengah Kejuruan di Kota Malang. *JURNAL EKONOMI BISNIS*, 14(2).
- Yin, M., & Wang, Y. (2017). Research on the Effect of Entrepreneurship Education on College Students ' Entrepreneurial Capability. *EURASIA Journal of Mathematics Science and Technology Education*, 13(8), 5813–5819. <https://doi.org/10.12973/eurasia.2017.01031a>