

## The Implementation of ICARE Learning Model to Improve Professional Competence of Students as Economics Pre-Service Teachers in the Industrial Revolution Era 4.0: A Literature Review

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### Abstract

The presence of professional teachers is one of the most important elements of education. Professional teachers are the deciding factor in the quality education process. Teachers are expected to perform their duties to educate, teach, and evaluate the students in achieving quality education. The Government always strives to improve the professionalism of teachers, one by providing incentives to teachers who have the professionalism in carrying out their duties. This form of incentive is teacher certification. Nevertheless, the Government's efforts have not been able to produce teachers who have the competence to expect. Padang State University as one of the university that produce the future teachers as their graduates, certainly takes an important role in producing future teachers who have good professional competence. Along with the times, the demands of professional competencies that must be owned by the prospective teachers in the era of the 4.0 industrial Revolution are increasingly complex. Although the role of teachers as educators, teachers, and advisers in schools will not be replaced by the presence of technology, future teachers should upgrade their professional competencies according to the needs of the times, in order to be Produce human resources that are not only qualified but also appropriate. Nowadays, the existence of pre-service teachers in the era of 4.0 not only required to possess the material mastery skills but also must have critical and innovative thinking skills in problem-solving, communication skills and collaborative information and communication technology that will be expected to be integrated into the learning process. One of the linear learning models with 4.0 demands is the ICARE model. ICARE stands for Introduction, Connect, Apply, Reflect, and Extend. The stages of ICARE learning begin with the introduction of material to students. The implementation of this model is believed to improve the professional competence of students as a economics pre-service teachers in Era 4.0

**Keywords:** *teacher competency, Revolution Era, ICARE, learning model*

### Introduction

The presence of professional teachers is one of the most important elements of education. Professional teachers are the deciding factor in the quality education process. Teachers are expected to perform their duties to educate, teach, and evaluate students in achieving quality education. The professionalism of teachers in carrying out their duties and functions is affirmed in legislation such as law No 14 the year 2005 about teachers and lecturers. The Government always strives to improve the professionalism of teachers, one by providing incentives to teachers who have the professionalism in carrying out their duties. This form of incentive is a teacher certification.

Nevertheless, the Government's efforts have not been able to produce teachers who have the competence to expect. It is mentioned that many teachers have been certified, but still show low performance. This teacher's low performance can be seen in the results of the Teachers ' competency (UKG) Test conducted in

2015, showing an average of 53.05% of the value of the UKG. This value is still under the minimum provisions set by the Kemendikbud, which is 55%. This statement was presented by Director General of Dikti IPTEK and Culture Bappenas RI, Amich Alhumaimi, MA, Med, Ph.D. Based on his explanation, the teachers' low competence is reflected in the class action, that the teacher is still weak in material mastery, and pedagogic That resulted in students being difficult to digest the material submitted (quoted from [www.metroandalas.co.id](http://www.metroandalas.co.id)).

Universitas Negeri Padang as one of the state colleges that produce future teachers as their graduates certainly take an important role in producing future teachers who have good professional competence. Along with the time development, the demands of professional competencies that must be owned by the prospective teachers in the era of the 4.0 industrial Revolution are increasingly complex. Although the role of teachers as educators, teachers, and advisers in schools will not be replaced by the presence of technology, future teachers must upgrade their professional competencies according to the needs of the times, in order to produce human resources that are not only qualified but also appropriate.

Nowadays, the existence of prospective teachers in the era of 4.0 not only required to possess the material mastery skills but also must have critical and innovative thinking skills in problem-solving, communication skills and collaborative Information and communication technology that will be expected to be integrated into the learning process. One of the linear learning models with 4.0 demands is the ICARE model. ICARE stands for Introduction, Connect, Apply, Reflect, and Extend. The purpose of this ICARE learning model is to improve students' learning outcomes with learning stages including introduction (explanation of learning objectives), connection (connecting initial students' knowledge with new information), application (practise and apply knowledge), reflection (summary of learning materials), extension (provides activities that students can do after the lesson is over) and emphasize on the development of socializing skills. This ICARE model is a student-centred learning model, allowing students to expand their knowledge from a variety of sources including from their website, youTube, and even social media.

### **Education in the 4.0 Era**

Industrial Revolution 4.0 known as the era of disruptive innovation, where the innovation is growing very rapidly, so as to help the creation of new markets. This innovation is also capable of disrupting or damaging the existing market and more powerful is able to replace existing technology. Reported from [tribunnews.com](http://tribunnews.com), facing such a big challenge then education is required to change as well. Includes education on primary and secondary levels. The Era of education is influenced by the Industrial Revolution of 4.0 called Education 4.0. Education 4.0 is an education characterized by the use of digital technology in the learning process or known as the Cyber system. This system is able to make the learning process can take place continuously without space limit and time limit.

Nine trends related to education in the 4.0 ERA are; first, learning can be implemented anywhere and anytime. Secondly, individual learning that demands students for strength and confidence to increase their individual capacities. Third, students are free to determine how the material they will learn. Fourth, students will be fully involved in the activity of the base learning project. Fifth, direct learning is gained through field experiences such as internships, education field practice sixth, learning will be implemented by applying from the data obtained. Seventh, learning concludes with an evaluation instead of testing. Eighth, the learning is modular, so the curriculum always changes according to the needs of students. Ninth students focus on learning so that the educator's role shifts into facilitators.

As a leading guard in the educational world, teachers must upgrade their competence in the face of the 4.0 education era. The student faced by the current teacher is a millennial generation who is familiar with the digital world. Students are familiar with the information flow and technology industry 4.0. Given the big challenge, the teacher must continue to learn to improve competence so as to be able to deal with students of millennials. Therefore, teachers should reduce the dominance of knowledge in education and learn in the

hopes that students are able to outperform the intelligence of the machine. Education that is balanced with character and literacy makes students will be very wise in using technology.

The competence needed in the era of education 4.0 that must be owned by the students is; 1) Critical thinking skills in problem-solving; 2) communication and collaborative skills; 3) creative and innovative skills; 4) Information and media literacy.

**ICARE Model**

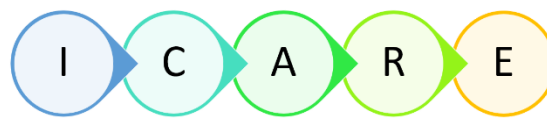
In accordance with Permendikbud No. 103 the year 2014 of learning at basic and secondary education, learning models are conceptual and operational learning frameworks that have names, traits, logical sequences, arrangements, and culture. Generally, learning models are the means or presentation techniques used in the learning process, in order to achieve the purpose of the learning. Nowadays, there are many different types of learning models, with various methods such as lectures, discussions, demonstrations, role-playing, case studies, and so on. One of the learning models currently developed is the ICARE learning model.

ICARE Learning model is a learning method that is by conducting the preparation of teaching materials aimed at achieving active learning and using a simple skeleton model. ICARE Learning Model, designed to help students effectively through online learning. ICARE Learning Model has five key elements of the good learning experience, which can later be applied to children, students, young and adult. ICARE stands for Introduction, Connection, Application, Reflection, and Extension. Its use gives students and trainees the opportunity to apply what has been learned. The Learning Model was developed by the United States Department of Educational Technology, San Diego University (SDSU).

The ICARE learning model has some advantages. Purwaningsih (2018) states the advantages of ICARE learning models including; mapping in terms of the balanced content structure between theory and practice for students, ICARE learning model has an approach based on the life skill, ICARE learning model also allows the school to perform monitoring and evaluation Openly to teachers, ICARE learning models provide opportunities for schools to create a curriculum structure formula that is as good as the needs, environmental conditions, and characteristics of students. In line with this, Jhon (2009) mentioned that by the terrorization of the ICARE learning model, learning becomes more meaningful because students are required to be able to find the relationship between learning experience in school with life Real. By connecting learning materials in schools with real life, making the materials taught can be firmly embedded in the students ' memory, so it is not easy to forget.

**ICARE Model Implementation**

According to Eka (2019) ICARE learning Model includes five key elements of the student learning experience, namely Introduction, Connection, Application, Reflection, and Extension (Learning Model Implementation



**Figure 1 ICARE Learning Procedure**

**Introduction**

At this stage of the learning experience, teachers instil an understanding of the content of lessons to students. This section should contain an explanation of lesson objectives and what will be accomplished or results to be gained during learning. The introduction should be done briefly and simply.

### **Connection**

Most of the learning is a series with one competency developed based on previous competence. So, all good learning experiences need to start with what students already know. At the connection stage, teachers are trying to connect new learning materials with something that students already know from previous learning or experience. Teachers can do this by holding a simple brainstorming exercise to understand what students already know. Teachers can ask students to tell what they remember from the previous lesson or session. It can also be done by developing an activity that students can do themselves. After that, the teacher can connect the students with new information. This can be done through a simple presentation or explanation. However, keep in mind that the presentation doesn't take too long.

### **Application**

The application stage is the most important stage of the lesson. After the teacher has acquired new information or skills through the connection phase, they need to be given the opportunity to practice and apply the knowledge and proficiency. The application section must last very long in the learning process, where students are required to work alone, not with instructors, in pairs or in groups. Students are required to complete real-life activities or solve real problems using the new information and proficiency they have acquired.

### **Reflection**

The Reflection section is a summary of the lessons learned. Students have the opportunity to reflect on what they have learned. The teacher's job is to assess how successful learning is. Reflection or summary activities can involve group discussions where the instructor asks students to make a presentation or explain what has been learned. Students can also perform self-writing activities, where they are asked to write a summary of the learning outcomes. This reflection can also be a short quiz with the teacher to give questions based on learning materials. This stage provides opportunities for participants to reveal what they have learned.

### **Extension**

Because the time of the lesson has finished, it does not mean that all students who have learned can automatically use what they have learned. At this stage, teachers provide activities that participants can do after the lesson has ended to strengthen and expand their learning. At school, extension activities are usually called homework. These activities may include providing additional reading materials, research assignments or exercises.

### **Methods**

The method used in the writing of this article is the literature review, which is a search of literature both internationally and nationally. In the early stages of the search journal article obtained 296 articles from 2015 to 2019 using the keyword "ICARE learning model" that has not explored the relevance to the article to be compiled. The article is understood by reading it mainly in the abstract section and in some cases the entire article. In the review literature, the key concepts will be related to the ICARE defines model will be recorded and developed more clearly

### **Results and Discussion**

Based on the results of the articles collected and analysis of the authors, the model of ICARE learning can be an alternative for teachers to provide learning that provides a real experience. ICARE Learning models can also improve some other abilities and skills, such as creative thinking skills and critical thinking. In the application of the ICARE learning model, the stage that is the main focus in developing students' ability to understand is the introduction and connecting. In the introduction stage, students will gain the ability to understand the indicator, conclude, and compare. As for the connecting phase, students will experiment with

the ability to compare, explain, and conclude. In the next three stages, students will be given the ability to apply and expand the material from the content that is being studied (Nori: 2016).

Through strengthening learning in the application of a given practice, the ICARE learning model emphasizes more systematic and integrated aspects of the life skill by organizing a more meaningful learning experience. ICARE models are also believed to help students develop high-level thinking skills through their involvement in real-life experiences and become independent learners (Tresna: 2017). Further Tresna explains the ICARE learning model can also improve the student's ability in problem-solving. This is supported by the teacher and student activities during the teaching and learning process. Students are directed to reveal what they know and make learning more meaningful and in a discussion process student are given the opportunity to criticize their friends so that they can exchange ideas. In completing a given task, students are more challenged to solve problems in groups as they exchange ideas to build problem-solving skills and will positively impact material understanding. In addition, increased problem-solving skills in students are also supported by mastering the concept of students. With mastery of this concept, students can know the material being taught.

According to Mahdian (2019), the role of the ICARE learning model can be seen from the ICARE's step, every step in the ICARE learning model can hone the students' ability to understand learning. This is because ICARE learning model is student-centred, where students are guided to build their own knowledge through introduction and connect stages, then students can prove the truth of the knowledge they have built on apply stage, then students reflect the knowledge they gained at the reflect stage and in the final stage is extend, students are given the opportunity to learn more and wider so that their understanding of the learning materials is stronger and meaningful.

The same is also expressed by Henikusumawati (2015) stating that students' mastery of the material can affect their learning outcomes. Further Mahdian (2019) explained that the use of the ICARE model aims to have students have the opportunity to apply what they have learned. Students can also construct their own knowledge due to the connecting stage, where students are guided to connect their new know-how with prior knowledge so as to improve students' understanding skills to the learning materials provided.

ICARE learning model can also encourage active discussions conducted among students in groups so that students are accustomed to proving their own concept directly. The discussions that students did make the learning process more meaningful because each student's discussion process is given the opportunity to criticize their friends positively so that they can exchange ideas for solutions to the problem Found (Yumiati: 2015)

## **Conclusions**

ICARE Learning models have the potential to explore student knowledge and student critical thinking skills. In the early stages of the ICARE learning model, the introduction directed students to observe the material exposure provided and then ask questions. Then, in the connecting phase, students are asked to be able to connect the new knowledge they get with previous knowledge, then they are directed to express the answer while the problem is given. Next at the Apply stage, students are required to practice the new knowledge they have gained from the connect stage. Furthermore, at the stage of reflection students are given the opportunity to reflect what they have learned. Students are asked to conclude and communicate what they have learned in front of the class. At this stage, each student or group can propose their opinion until finally a conclusion of learning as a whole. The final stage is extended, the students are asked to use the concept they already have and understand to explain the new problems in the new situation anyway. This extend stage is usually more to the provision of structured assignments to students, in order to strengthen students' understanding. Then it can be concluded, from a series of stages of the ICARE learning model, can encourage students to improve their professional skills as a prospective teacher.

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