Peni Suharti

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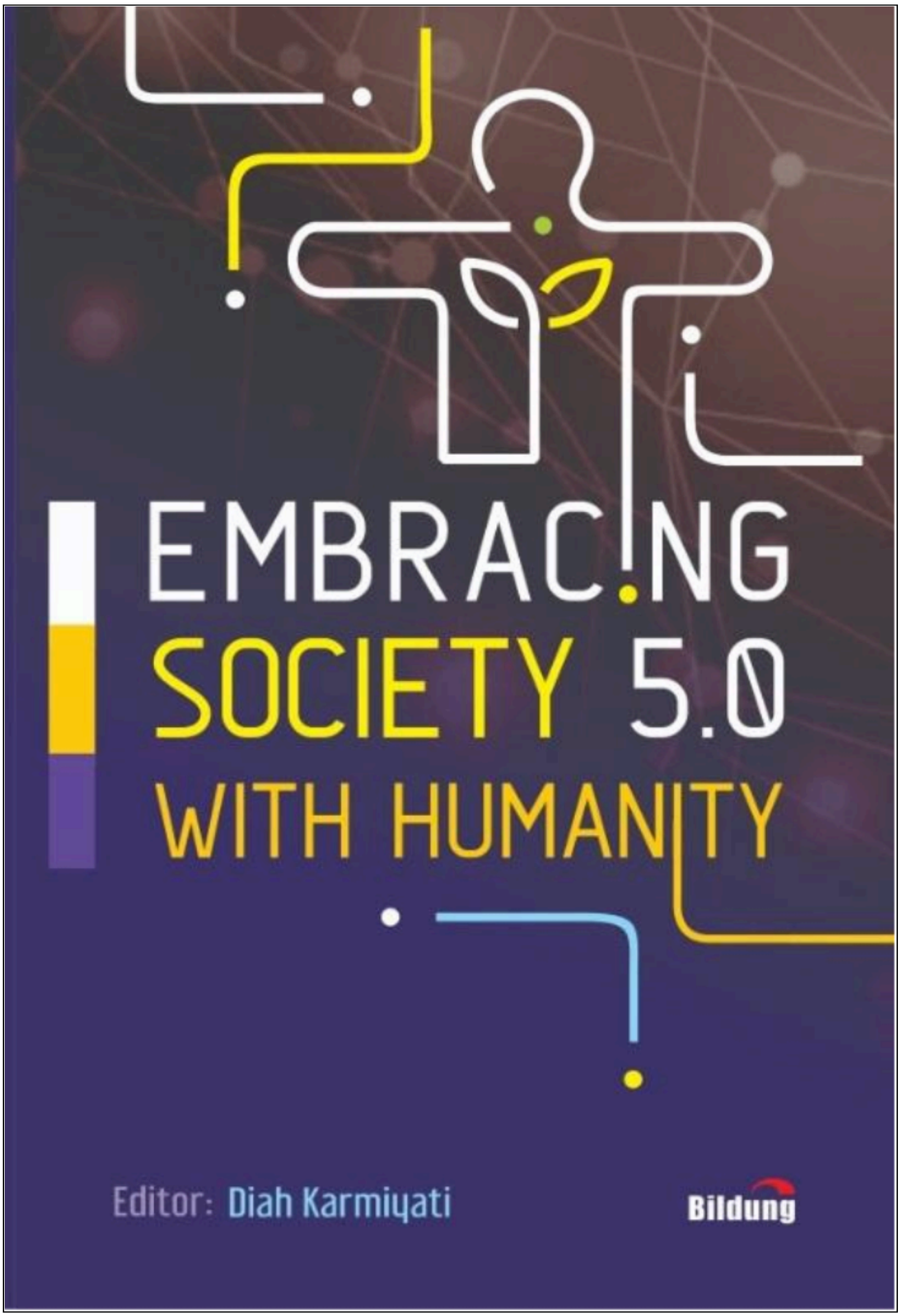
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SOCIETY 5.0
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Embracing Society 5.0 with Humanity

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Society 5.0 is a concept presented by the Japanese as a core concept of their economic system. They believed that technology should not surpass the intelligent of men. As such, in society 5.0 the Japanese government would like to ensure that all technological things are designed to be a human-centered design. In fact, their ministry of education in 2018 has also been readily prepared the future generation through a change in their education system. For example, the minister explains that in Japan, or many parts of the world, university entrance are divided into two main concentrations, which are science and social science. The minister thought of changing the system, as society 5.0 is about creating a technology that is human centered. For instance, they gave an example on designer babies. If, people from hard science learn about philosophy, ethics, and humanities, they won't face such ethical concern when developing a product. This is what is being envision by the Japanese government for their younger generation. Collaboration between science and social science is necessary to build a better environment for our future children. Another example is the companies in Japan, such as Hitachi and Fujitsu has already been implementing this 5.0 by designing product that relied fully on technology but puts human at its center (Hitachi, 2017).

Likewise, it is currently a hot topic in Indonesia. Indonesia as a country with the 4th largest population in the world has not been implemented this concept. Our country is still on the industry 4.0. Yet, with the rising interest in AI, Blockchain, NFT, number of unicorn start-up. and all recent technological changes, our country are ready to compete with any other countries in Southeast Asia. Society 5.0 is coming, and we need to embrace it. To prepare with the society 5.0, It is not only the technological side. It is necessary for us to have a strong principle at hearts that based on our belief system. We, as an Indonesian have known to be religious that most of us believed in God. We also commonly practice our religion and tend to be kind to people because we know God would love our good deeds. I personally think that this will help us to move forward and live together with advanced technology.

Technology begets a very important leap in human's life journey. It is important to keep valued of the benefit but it's more important to look out for the human itself. As its purpose is smarter than us, to help us, it will be very ideal if we embrace the technology using our ability to be kind.

Malang, 21 Maret 2022

Diah Karmiyati

Daftar Isi

Practicing Communication, Collaboration, Critical Thinking and Creative Thinking Skills in Learning

Peni Suharti[93]

Introduction

21st century skills, which consist of communication, collaboration, critical thinking and creative thinking skills are today's global demands [16], [5]. Thus, these 21st Century Skills must be developed in students [13], [9], [3], [19]. Collaboration and communication skills are tools of life in carrying out their activities both in the community, education, and work environment, while critical and creative thinking skills are needed in solving problems faced in real life. For this reason, the learning process must facilitate the development of the four 21st century skills in students [5], [19]

Communication skills are important soft skills that must be achieved by students in the learning process [9]. Soft skills are closely related to the ability of students to communicate the results of their observations or decisions taken. The results of students' thoughts should be able to be clearly communicated by students, both in writing and orally. By communicating what they think in the learning process, they will better internalize what they understand

Collaboration skills are another skill that students need to have [7], [13]. When students collaborate, it will involve the active participation of students to achieve common goals with a high positive dependence in solving academic and daily life problems. Through collaboration, students who have low abilities will also be helped to achieve the expected learning goals. [2], [6], [12]. For this reason, it is very important to facilitate students to have collaboration skills.

Based on the results of research at Harvard University, the National Association of College and Employee (NACE) states that the most important indicators of a champion are the ability to collaborate/collaborate, integrity, communication, and ethics. 80% of a person's success is determined by the person's soft skills in managing themselves and others. While hard skills such as skills and technical knowledge only determine 20%. [9].

Creative thinking skills are divergent thinking activities which are the foundation for producing something new (original), then reflected in changes in one's mental or personality. Creative

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thinking will direct the development of knowledge already possessed by students, provide other perspectives and reconstruct it into a product as a form of creative thinking. Therefore it is important to develop creative thinking skills in students. [8]

[19] stated that creative thinking skills are very important to be realized by teachers in the science learning process because there is a discovery process that can hone students' creative thinking. If creative thinking skills are not developed, it will lead to low understanding of concepts by students. Learning activities that will encourage students to think creatively in science learning are investigative activities that allow students to conduct investigations. This learning activity will encourage students to think creatively.

Critical thinking skills are reasonable and reflective thinking that focuses on deciding what to believe or do. Critical thinking is a systematic process used in mental activities such as problem solving, decision making, analyzing assumptions, and conducting scientific research. Critical thinking is an activity to evaluate or evaluate something in an effort to make rational and reasoned judgments and conclusions. This means that critical thinking allows students to evaluate evidence in an effort to make rational conclusions. Based on the expert opinion above, it can be stated that critical thinking skills are needed in solving problems faced in real life, so that critical thinking skills need to be mastered by students. For this reason, students must be facilitated to have critical thinking skills [4], [19].

This is in line with Permendikbud No. 20 of 2016 about concerning graduate competency standards, which explains that the competency standards of education unit graduates in the field of skills have acting and thinking skills which include: independent, collaborative, communicative, productive, critical, and creative, through a scientific approach as a development of what is learned in the unit. education and other resources independently.

Efforts that can be made to improve students' communication, collaboration, critical thinking and creative thinking skills are by conducting learning using learning strategies that apply investigative steps. Through investigation, it will encourage students to become thinkers and be able to provide many alternative answers to a problem. And work together to solve problems faced through student communication and collaboration. The learning environment that is formed must provide opportunities for students to think openly and flexibly without fear and shame. In addition, the learning environment must have a situation that facilitates discussion and

encourages students to convey ideas so that communication and collaboration occurs among students [1].

The problem that arises is what learning model can facilitate students in practicing communication skills, collaboration, critical thinking and creative thinking? The purpose of this study is to describe the appropriate learning model to facilitate students in practicing communication and collaboration skills, critical thinking and creative thinking, based on literature studies..

Discussion

Learning models that are able to train communication and collaboration skills, critical thinking and creative thinking are learning models that are able to create positive dependence among students, as well as facilitate students' critical and creative thinking processes. These four skills can be facilitated through investigative steps to solve problems [14], [15]. The investigation in question is an investigation that will encourage students to become good thinkers and be able to provide many alternative answers to a problem through communication and collaboration. To collaborate there must be positive dependence among students.

The IBSC (Investigation Scientific Based Collaborative) learning model is a collaborative learning model that has 5 syntaxes, namely: 1) Motivation and Problem Orientation, 2) Sharing Task Collaboration Investigation, 3) Presentation, 4) Jumping Task Collaboration Investigation and 5) Evaluation (Suharti , P., 2019). The explanation of each syntax is as presented in table 1

Table 1: Teacher and Student Activities in the IBSC Learning Model

Theacher Activities	Student Activities
Phase 1: Motivation and problem orientation	
1. The teacher motivates to arouse students' interest by presenting/raising facts, phenomena, or issues related to the learning objectives that must be achieved 2. The teacher conveys the objectives of learning, 3. The teacher provides direction regarding the collaborative	1. Students are motivated and interested when presented facts, phenomena, or problem issues related to the learning objectives that must be achieved 2. Students pay attention to the objectives of the learning delivered by the teacher.

Theacher Activities	Student Activities
learning process as well as the assessment of communication skills and collaboration skills in the learning that is carried out	3. Students listen to the teacher's directions about the collaborative learning process and the assessment of communication skills and collaboration skills in the learning that is carried out.
Phase 2: Collaboration Investigation Sharing task	
1. The teacher gives students a Student Worksheet (LKS) containing assignments that are sharing tasks for each group 2. The teacher explains the instructions for carrying out the discussion and their duties along with the sources that will be used 3. The teacher acts as a mediator and facilitator to increase students' positive dependence so that communication and collaboration occurs among students by fostering empathy for high-skilled students and raising the courage of students who do not understand to ask their friends who already understand. Through 4 steps: a. The teacher goes around observing the work in each group to find out which students have difficulty or do not understand and which students already understand. b. The teacher asks students who do not understand which part has not been understood. c. The teacher tells the group if any of their friends do not understand. d. The teacher subtly asks students who do not understand to ask their friends who already understand and subtly asks students who already understand to help their friends who do not understand.	1. Students receive student worksheets (LKS) containing tasks that are sharing tasks in each group 2. Students listen to the teacher's explanation of the instructions for carrying out the discussion and their duties along with the sources that will be used 3. There is a different role for each student in the group to take part in solving the main problem of sharing tasks 4. Students who do not understand dare to ask their friends who already understand. 5. Students who already understand help their friends who do not understand 6. There is a positive dependence among students so that communication and collaboration occurs among students because of the growing sense of empathy in high-ability students and the courage of students who do not understand to ask their friends who already understand.
Phase 3: Presenting/Presentation	

Theacher Activities	Student Activities
1. The teacher asks students to present/present by displaying the results of the discussion (LKS Sharing task) 2. The teacher guides the students to have a discussion. 3. The teacher acts as a mediator and facilitator for communication and collaboration in class discussions	1. Students present information logically on the results of their group work 2. Students manage time proportionally during presentations 3. Students use image media 4. Students speak without grammatical errors with good gestures 5. Students use the appropriate volume of voice and speech when delivering 6. Students understand the listener's question 7. Students integrate knowledge when answering questions
Phase 4: Collaboration Investigation jumping task	
1. The teacher gives a follow-up task in the form of a problem from jumping material (Jumping task) both conceptual and application that exceeds the minimum competence that must be completed collaboratively. 2. The teacher acts as a mediator and facilitator to facilitate the occurrence of positive student dependence so that communication and collaboration occurs among students by fostering empathy for high-ability students and raising the courage of students who do not understand to ask their friends who already understand, by: a. The teacher goes around observing the work in each group to find out which students have difficulty / do not understand and which students do. b. The teacher asks students who do not understand which part has	1. Students work on advanced tasks in the form of problems from Jumping tasks, both conceptual in nature or application that exceeds the minimum competence that must be completed collaboratively through LKS. 2. High ability students feel challenged to complete the jumping task 3. There is a different role for each student in the group to solve the problem. 4. Students who do not understand dare to ask their friends who already understand. 5. Students who already understand help their friends who do not understand 6. There is a positive dependence among students so that communication and

Theacher Activities	Student Activities
not been understood. c. The teacher tells the group if any of their friends do not understand. d. The teacher subtly tells students who do not understand to ask their friends who already understand and subtly asks students who already understand to help those who do not understand.	collaboration occurs among students because of the growing sense of empathy in high-ability students and the courage of students who do not understand to ask their friends who already understand.
Phase 5: Evaluation	
1. The teacher guides students to review the material that has been studied today. 2. The teacher motivates students whose jumping tasks have not been completed to finish at home by collaborating in their groups 3. The teacher informs the students that the post test is carried out after learning 1 KD is complete (3 meetings) 4. The teacher ends the lesson by greeting	1. Students review the material that has been studied today under the guidance of the teacher 2. Students whose jumping tasks have not been completed can finish at home by collaborating in their groups 3. Students listen to the explanation about the implementation of the post test 4. Students answer the teacher's greeting when the lesson ends.

(Sourch, Suharti, 2019)

Based on the activities of teachers and students in the syntax of the Investigation Based Scientific Collaborative (IBSC) learning model, it can be said that the IBSC model can facilitate students in practicing the four 21st century skills. This can be explained as follows. In the IBSC model there is the Investigation Collaboration Sharing Task syntax (second syntax) and Investigation Collaboration Jumping Task (fourth syntax). In both syntaxes, students are asked to carry out investigations to solve the main problem through solving the sub-problems given. This main problem can only be solved if the sub-problems have been resolved first. Sub-problems are distributed to members to be resolved and become their expertise in the problem. So to be able to solve the main problems students must communicate and collaborate in groups.

When group members are completing their tasks on the Syntax Investigation Collaborative Sharing task and Jumping Task, the teacher acts as a mediator and facilitator to foster positive dependence among students. The way the teacher does is observe in each group whether there are students who have difficulty in solving the problems that are their assignments. If one member of the group (expert) has difficulty, the teacher tells the student to ask a friend in the group for help who can help. The teacher also reminds students who have high abilities in the group to be willing to help friends in groups who are having difficulties. The teacher reminds that if one sub-problem is not resolved then the group will not be able to solve the main problem. That way, a positive dependence among students in the group will occur. When positive dependence has occurred among students in the group, this will encourage communication and collaboration among students. After each expert solves the sub-problem, then they communicate with each other and collaborate to solve the main problem. Without communication and collaboration among group members, major problems will not occur. Thus the IBSC model can facilitate communication and collaboration skills. This is in accordance with the opinion of Moreno (2010). about positive dependency theory and positive transfer. Likewise with the opinions of [14], [15], which state about positive dependency theory, Sharing Task Investigations and Jumping Task Investigations.

When each member of the group who acts as an expert is able to solve the sub-problem or when the group solves the main problem, critical and creative thinking skills are needed. Because when they try to solve the problem, there will be analysis, synthesis and evaluation as well as creating their thinking process to ensure the answer is correct and appropriate in solving the problem. Students will think openly, divergently and critically.

Conclusion

To practice communication skills, collaboration, critical thinking and creative thinking, in learning, you can use the IBSC Learning model through the syntax of Sharing Task Collaboration Investigation and Jumping Task Collaboration Investigation. Both of these syntaxes facilitate students to think analytically openly and divergently and facilitate positive dependence between students.

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