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Implementation of Online Collaborative Learning Model to Empower Social Skills Reviewed from the Initial Ability of Muhammadiyah Elementary School Students in Surabaya in the Era of Industrial Revolution 4.0

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Abstract:- The purpose of this article found out the implementation of the online collaborative learning model to empower social skills based on the initial ability of students in the era of the industrial revolution 4.0. This era is part of the need to form digital literacy through the development of science and technology that occurs. The research method used experiments with a type of quasi experiment. Then the Quasi experiment was done because not all influential variables can be strictly controlled. The research subjects were Muhammadiyah elementary school students in Surabaya as many as 100 respondents with treatment in the form of online collaborative learning models. Based on the calculation results, it was found that the F_{Count} value was 5.06 while the F_{Table} value was 1.66 (5.06 > 1.66) so that the F_{Count} value was greater than the F_{Table} value then Ho was rejected and Ha was accepted. While significance result as low as 0.021, and Sig. < score of 0.05 then H_0 was rejected and H_1 was accepted, it was concluded that there was an influence of initial ability on students' social skills. There was an influence on the implementation of the collaborative learning online model on students' social skills with sig scores. 0.004 < α 0.05 means that H_0 is rejected and H_1 is accepted. and on the analysis of students' initial skills on students' social skills there was no influence with a sig score of 0.113 > α 0.05. Therefore, it can be concluded that there was an influence on the implementation of the online collaborative learning model on social skills, judging from the initial ability of Muhammadiyah Elementary School students in Surabaya.

Keywords:- *Collaborative Online Model of Learning, Social Skills, Initial Abilities, Elementary School of Muhammadiyah Surabaya.*

I. INTRODUCTION

Today's era of globalization, it is necessary to prepare everything related to Human Resources (HR) plays a very important and strategic role, in order to face the challenges in the development of science and technology that is increasingly advanced and sophisticated (Padarian et al., 2019). The development of science and technology has brought us in an era with a society that cannot develop without science, because every effort to improve the welfare of life requires the help of science and technology (Bilbao et al., 2021). The development of science and technology and the demands of globalization together have resulted in increasingly fierce competition about the need for the provision of quality human resources, and everything related to the quality of human resources cannot be separated from the world of education, andeducation can be said to be a conscious effort to humanize humans (Lock & Redmond, 2021).

Education is essentially a process of socialization towards intellectual, social, moral maturity, in accordance with his ability and dignity as a human being. Even education is believed to be the key to the success of future competition (Elliott et al., 2019). Education must be able to develop oneself as a complete individual, as a member of society, as a citizen of his nation. Another word is able to know yourself, the surrounding community (Tseng et al., 2019). This recognition process requires the development of cognitive, affective abilities including imagination and inspiration (Moeller& Seehuus, 2019). Related to educational activities which is a social process that cannot occur without interpersonal interaction (Salavera et al., 2019). While learning cannot be separated from educational activities as a social process that occurs when each person relates to the other and builds understanding and knowledge together (Salavera et al., 2017).

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During the pandemic like today learning is no longer done face-to-face as usual, but the learning process is carried out online (Nadiyah & Faaizah, 2015). Online learning is starting to become a trend in the digital era as it is today and can be used as an alternative to learning in many situations, as happened around the world during the pandemic (Othman et al., 2013). Indonesia is one of the countries affected by the Covid-19 pandemic(Nur'ainun & Novieastari, 2019). In the field of education, the government enacts a policy of learning from home withinternet facilities (online learning) or better known as distance learning to reduce the gathering of time somewhere (Ryan et al., 2020). This is intended to stop the spread of the Covid-19 virus. The implementation of physical and social distancing causes teaching and learning activities can no longer be done in the classroom (Wang et al., 2020).

All educational institutions conduct online learning according to students' abilities (Miguel et al., 2016). Online learning can be done using digital technologies such as WhatsApp, google classroom, google meet, zoom meeting, Edmodo, sociology and others. The rapid development of information and communication technology (ICT), coupled with pandemic conditions that require home learning makes collaborative learning very possible today (Rapchak, 2018). Collaboration is actually a human need, so humans as social creatures stand certainly always in contact with others, working together and helping each other (Xie et al., 2018). Collaboration is also a must in learning activities (Muñoz-Carril et al., 2021). In traditional learning activities, collaboration usually occurs between students or teachers from the same school or class (Xu et al., 2021). But with the availability of internet communication networks, cooperation between schools, between regions, even across national borders is possible (Kuzmina & Ivanova, 2018).

During the current pandemic, student pressure and burden increased due to changes in learning systems, methods and models from face-to-face to online with all new adjustments and various obstacles experienced such as quota and network problems (Pesu et al., 2018). Online learning conducted for a long time at home alone causes boredom and saturation (Gaudreault et al., 2021). The students who used to gather and group with friends at school lost theircloseness both physically and emotionally so that the sense of familiarity changed with loneliness (Din, 2020). This condition can aggravate the current conditions that affect academic achievement (Bollimbala et al., 2020). In addition to quota and network constraints, online learning can give rise to a sense of individualism due to the loss of a sense of community and belonging such as when meeting in person (Heyder et al., 2020).

One method that is considered capable of contributing to the creation of social support in learning is collaborative learning methods that can also be applied online (Morris et al., 2017). Collaborative learning offers broad prospects for educators as it enables the use of various patterns of interaction, discussion, exchange of opinions, peer assessment, building community e-learning, encouraging the development of e-culture and preparing the future to work in the professional field onthe new pandemic (Morris et al., 2017; Pawattana et al., 2014; Sia et al., 2021). Collaborative learning refers to shared learning that encourages learners to collaborate to design something instead of simply absorbing the knowledge provided (Karatas et al., 2015; Sanrattana et al., 2014).

In fact, with teaching methods commonly done online, critical thinking skills and social interaction practices hardly occur. As a result, the goal of teaching and learning is not achieved (Jewett & Kuhn, 2016; Sigalit et al., 2017). With one-way lecture methods, assignment via classroom, email or WhatsApp results in the development of a sense of belonging in the group, skills to appreciate opinions, understand oneself and others neglected during the process (Sia et al., 2021). A sense of community, respect and involvement becomes neglected because of the lack of personal approach between students. A good teaching and learning process isable to create social support (Jewett & Kuhn, 2016; Panagiotopoulou, 2018). One method that is considered capable of contributing to the inclusion ofsocial support in learning is the online collaborative learning method that is effectively implemented under current conditions (Sia et al., 2021; Sigalit et al., 2017).

Online Collaborative Learning is an development of a collaborative learning model supported by ICT devices (Nadiyah & Faaizah, 2015; Padarian et al., 2019). Collaborative Learning (CL) model is a systematic and structured learning activity where students can work with other students (Othman et al., 2013). The emergence of Collaborative Learning starts from the concept of learning (Koszalka et al., 2021). Learning is a process of social interaction in which students can build mutually accepted meanings and concepts (Hernández-Sellés et al., 2019; Lock & Redmond, 2021). The Collaborative Learning model has five components, namely positive interdependence, individual accountability, face-to-face interaction, social skills, and group formation. The five components if applied in the implementation of learning activities, students will be motivated, participated, and have a sense of responsibility when learning activities take place so as to have a positive impact (Ryan et al., 2020; Wang et al., 2020).

Collaborative Learning online learning can improve students' social interaction and can be used as a means of improving students' social skills through group learning (Miguel et al., 2016; Rapchak, 2018). So with Online Collaborative Learning can guarantee students have high academic ability to be even better (Xie et al., 2018). This learning is a group learning activity where each member in the group must contribute information, ideas, knowledge, and skills possessed by each member in order to improve the understanding of all members in the group (Covington et al., 2021; Gholami et al., 2021). Online Collaborative Learning can provide opportunities to learn from each other, exchanging ideas with group members so as to affect students' critical thinking skills and social skills in the group (Heyder et al., 2020).

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II. RESEARCH METHOD

A. Research Type and Design

This research was a type of quasi experiment research. The research subjects were students of Muhammadiyah Elementary School Surabaya with the provision of treatment in the form of learning models. Researchers in this case do not allow to form a new class. Then with the post-test pre-test control group approach with parallels used to compare between the treatment group (intervention) and the control group (without intervention).

B. Population and SDM Research

The population was the fifth class in Muhammadiyah Elementary School in Surabaya for the odd semester of the 2020/2021 school year. The population of this study is all students from SDM 4 Surabaya, SDM 8 Surabaya, and SDM 18 Surabaya. Taking the subjects of the three elementary schools on the grounds that all three have almost the same quality as almost the same culture as well. While the samples were taken 6 classes, namely 3 classes of experimental groups and 3 classes of control groups based on three human resources in Surabaya. Determination of samples through cluster random sampling techniques with consideration because the number of Muhammadiyah elementary and mi in Surabaya that total 28 schools with diverse characteristics. There are 28 elementary schools / MI that had almost the same characteristics. Based on random results through the lottery that had a homogenous nature, the selected class is 2 classes from each of the three schools, namely SDM 4 Surabaya, SDM 8 Surabaya, and SDM 18 Surabaya.

C. Data Collection Techniques

Data collection was a search activity used in answering problems that arise in research by recording all events, characteristics, information from various sources. In this research, the data collection techniques that were used included as follows: 1) The test techniques in this study were carried out to measure students' skills with essay questions conducted through pre-tests and post-tests. 2) Observation was carried out by providing observation sheets in the form of frameworks with the form of value scales or in the form of notes from the findings of research results related to the effectiveness of the application of Model. 3) Questionnaires were carried out through the provision of question list instruments that must be answered by respondents on the Likert scale.

D. Data Analysis Techniques

The data description was carried out by univariant descriptive data analysis including deviation standards, variances, averages, and graphs. The description of the data for the bound variables, namely social efficacy that was reviewed from the student's initial ability to be carried out based on the data of the results of the pretest and posttest implementation. For free variables use the Collaborative Learning Online Model. The prerequisite test of analysis on variance analysis refers to the analysis of the following. Normality tests were used to test samples to find out if the data was distributed normally. In this research, the data used was tested normality using the Kolmogorov Smirnov method with the help of SPSS software, while the data to be tested for normality was as follows. 1) Data on social skills of students of conventional learning model groups. 2) Social skills data student group OCL Model. 3) Data on the social skills of students of the initial ability group. And 3) Data on the social skills of OCL Model group students with initial abilities.

Hypothesis testing in testing the effect of OCL model variables and initial ability on critical thinking skills and social skills using a two-track ANOVA consisting of multivariate tests, tests of between subjects' effects, and graphs of interactions between free variables to bound variables. One technique in multivariate analysis is Analysis of Variance (ANOVA). Analysis of Variance is a statistical technique used to test the significance of the average difference between groups simultaneously for variables bound by two or more. The multivariate test is the testing of the influence of free variables with bound variables is the ability to think critically and social skills.

To strengthen the test results assumptions of normality and homogeneity of bound variables, a multivariate test is carried out using Pillai's Trace. Testing to determine the influence of free variables on each bound variable and their interactions is carried out a test of effects between subjects (Test of Between-Subject Effect). Manual calculation, used the formula of multiple correlation coefficient. If the test results with effects between subjects are accepted, then follow-up testing (post-hoc test) needs to be done. This test is to determine significant differences from the average group according to their free variables. Furthermore, a comparison test was conducted between estimated averages using the least significant difference (LSD) approach. Statistical analysis for descriptive analysis, assumption test and hypothesis testing are used SPSS-v.2.0 for Windows.

III. RESEARCH RESULT

Research result on the implementation of the online collaborative learning model to empower social skills was reviewed from the initial ability of Muhammadiyah Elementary School students in Surabaya in the era of the industrial revolution 4.0 pointed tothe implementation of effective learning through the observation sheet used. In the first meeting using Online Collaborative Learning obtained an average score of each activity 4 conducted at the meeting to 1, 2, and 3. The activity of such implementation falls into the category of very good. Preliminary activities, with perceptions carried out provide encouragement in student learning with the aim of learning on the orientation of the problem to be discussed. Activities carried out by teachers as facilitators facilitate students interactively and improve their social skills.

In the learning process, the teacher ensures that students are ready to follow the learning with motivation in arousing the interest of the students who will be studied. The implementation of this learning activity got a score of 4 with an excellent category. The next stage with collaborative investigation, presenting, and collaborative investigation of teachers divides students into groups, then divides the

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Learner Worksheet (LKPD) while explaining the procedures and the teacher is always proactive in facilitating students as the subject of learners in each group. The activity presents, teachers provide opportunities for groups to represent the findings obtained during their respective discussions. The core activities at each meeting have a 4-point with excellent categories and end with the cover as a step of evaluation and reflection.

The evaluation step was carried out by the teacher that guided students to review the diversity of the material and reflect on the learning that has been done as one of the rewards for students who ask, argue or argue, and end the learning process. At each meeting, all activities through evaluation activities have an average score of 4 with excellent categories. Overall, the implementation of the Collaborative Learning Online Model to train critical thinking skills of Muhammadiyah Elementary School students in Surabaya City on the material that is carried out very well. This implementation observes directly the learning process through the collaborative learning online model.

The results obtained data that included research data obtained from 100 students at Muhammadiyah elementary school in Surabaya with cultural culture from each of these schools as research subjects, consisting of SD Muhammadiyah 4 Surabaya, SD Muhammadiyah 8 Surabaya, and SD Muhammadiyah 18 Surabaya, with non-probability sampling techniques. The opposite of probability sampling technique. Through this technique sampling by not providing equal opportunities or opportunities for each element or member of the population that is sampled.

Gender	Sum	Percentage
Man	67	0.67
Woman	33	0.33
Total	100	100%

Table 1: Respondents' Characteristic

Respondents selected as many as 100 students consisting of 3 Muhammadiyah Elementary Schools in Surabaya with gender characteristics there are men 65% while women 35%. Therefore, of the 100 student respondents, they were treated using the Online Collaborative learning model. From the description of the average independent variable and variable with a score of 0.49. The T_{table} value obtained compared to the value of T_{table} with a score of 5.06 while T_{table} with a score of 1.66 so that the T_{count} was greater than $T_{table,}$ then Ho is rejected, so it can be concluded that the independent variable had an effect on the dependent variable (online collaborative learning model). There was an influence on social skills judging from the initial ability). Then the initial ability can be explained in the diagram below.

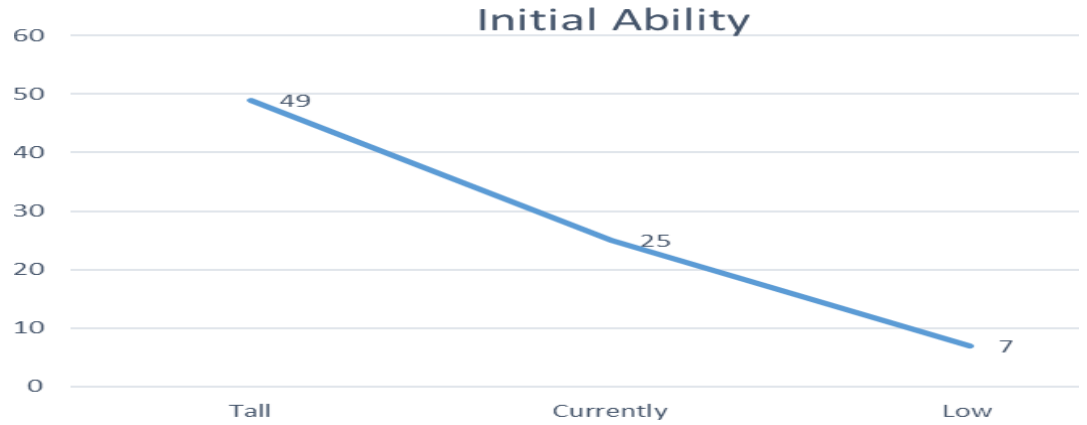

Fig. 2: Student Initial Ability

The student's initial ability describes the student's readiness in receiving the lessons to be delivered by the teacher. The initial ability of the student is important to be known by the teacher before starting learning, because thus it can be known that whether the student has had or knowledge that was a prerequisite for following the learning, and the extent to which the student had known what material can be presented. Thus, from these two things, teachers can design learning better. From the diagram above, it was illustrated by the data that obtained through research with the highest tail amounting to 49%, a medium tail amounting to 25%, and the lowest tail numbered 7%.

Research with independent variable online collaborative learning models while dependent variable empowers social skills based on students' initial abilities, through research using quasi experiment research methods. Data obtained through research was carried out descriptive data processing and inferential data management to determine the significance of the influence of independent variables on independent variables. Through ANOVA analysis with the help of SPSS application version 26 in explaining each of the following variables.

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Variable consists of	Online Collaborative Learning, Social Skills, Initial Abilities				
Source	**Type III Sum of Squares**	**Df**	**Mean Square**	**F**	**Itself.**
Corrected Model	2736.654[a]	73	37.488	5.505	.012
Intercept	433048.906	1	433048.906	63594.595	.000
Explanation. Beginning	613.900	19	32.311	4.745	.021
Online Collaborative L	1363.628	24	56.818	8.344	.004
Previous explanation * Collaborative	446.725	29	15.404	2.262	.133
Error	47.667	7	6.810		
Total	683226.000	81			
Corrected Total	2784.321	80			

Table 1: Tests of Between-Subjects Effects

a. R Squared = ,983 (Adjusted R Squared = ,804)

Based on the results of the calculation, it is obtained that 1). Obtained an F_{count} value of 5.06 while the F_{table} value is 1.66 (5.06 > 1.66) so that the F_{count} value is greater than the F_{table} value then Ho was rejected and Ha was accepted. While significance results as low as 0.021, and Sig. < 0.05 then $H_0$was rejected and H1 was accepted, it was concluded that there is an initial capacityinfluence on students' social skills. There was an influence on the implementation of the collaborative learning online model on students' social skills with sig scores. $0.004 < \alpha\ 0.05$ means that H_0 is rejected and $_{H1}$ is accepted. 3) In the analysis of students' initial skills on students' social skills there is no influence with a sig score of $0.113 > \alpha\ 0.05$. Therefore, it can be concluded that there was an influence on the implementation of the online collaborative learning model on social skills, judging from the initial ability of Muhammadiyah Elementary School students in Surabaya.

IV. DISCUSSION

The results proved that there was a significant difference between classes that were given the online collaborative learning model and those that were not given. This conclusion was obtained from decision making based on sig values. < 0.05 then H_0 was rejected and H_1 was accepted, then there was an influence on the implementation of the collaborative learning online model on social skills judging from the students' initial abilities. This result was explained that the form of the learning process was equipped with instructions and stages that clearly became its own advantages in completing social skills reviewed from the student's initial ability (Bollimbala et al., 2020; Din, 2020). The instructional direction here would lead students independently to be able to learn interactive and fun learning materials in situation and conditions that occurred in the pandemic era (Pawattana et al., 2014; Sanrattana et al., 2014).

The online collaborative learning model implemented at elementary schools Muhammadiyah in Surabaya was one of the learning models oriented to the constructivism perspective. This learning model established members of small groups of equal standing in collaborating to achieve common goals, to perform common tasks, and to evaluate the same results (Hernández-Sellés et al., 2019; Ryan et al., 2020). Online collaborative learning is basically characterized by a large amount of interdependence between students in groups so that they can build an autonomous person and are good at articulating learning thoughts and can achieve meaningful and meaningful learning shown by improving students' social skills and understanding of learning materials (Wang et al., 2020).

Meaningful learning can be achieved if students can carry out assumptions in online collaborative learning (Miguel et al., 2016). This learning model is carried out with an online or online system by maximizing the participation of individuals in the group both in the process of fulfilling learning tasks and in the discussion process so that each individual hasan optimal contribution to his group (Rapchak, 2018; Xie et al., 2018). This optimal contribution process can be achieved through the implementationof the concepts of thinking, saying, and doing good so that each individual in his group always thinks positively and will strive to the maximum to achieve student learning success (Xu et al., 2021). The modelis completed with two types of learning in groups, namely intra-team and inter-team that support student collaboration in the learning process according to the learning stage (Covington et al., 2021; Kuzmina & Ivanova, 2018).

The implementation of online collaborative learning in research can improve students' social skills with sig scores. $0.004 < \alpha\ 0.05$ meant H_0 was rejected and H_1 was accepted. Social skills themselves can be defined as the ability to create harmonious social relationships and satisfy various parties, in the form of adjustments to the social environment and skills to solve social problems (Salavera et al., 2019). Social skills cover the ability to control self, adaptation, tolerance, communicate, participate in people's lives (Salavera et al., 2017). This skill when associated with students becomes very important to be increased in the learning process, because, this social skill becomes one of the characters of learners to be able to interact with others or their environment (Morris et al., 2017; Panagiotopoulou, 2018).

If students do not have social skills, they will certainly not be able to carry themselves in their environment. Conversely, if students have high social skills will certainly

be able to cooperate with others (Pawattana et al., 2014; Sanrattana et al., 2014). In addition, students who have high social skills will also have a sense of empathy for others and can find a way out or solutions to the problems faced, especially in the learning process (Jewett & Kuhn, 2016; Karatas et al., 2015). On the other hand, the implementation of online collaborative learning also has to do with the initial skills of students with the results of research that has been analyzed that the results of significance as low as 0.021, and sig. < 0.05 then H_0 is rejected and H_1 is accepted, so there was an influence of initial ability on students' social skills. Due to the initial ability as the determining factor in the success of learning (Hong et al., 2021; Karnieli-Miller et al., 2021).

The student's initial ability is an ability that has been possessed by students before participating in the learning to be given (Heyder et al., 2020; Nur'ainun & Novieastari, 2019). This initial ability describes the readiness of students in receiving lessons to be delivered by teachers (Bollimbala et al., 2020; Din, 2020). Students' initial abilities are important for teachers to know before starting with their learning, because then it can be known whether students already have knowledge that is a prerequisite for following learning to the extent to which students know what material to be presented (Gaudreault et al., 2021; Pesu et al., 2018). Since the student success in learning depends on the readiness of the child. The readiness of this student is of two kinds, his mental development is ready and his prerequisite knowledge is already possessed (Salavera et al., 2017).

V. CONCLUSION

The results of the research can be concluded that the implementation of the Online Collaborative Learning model to empower social skills was reviewed from the initial ability of Muhammadiyah Elementary School students in the era of the industrial revolution 4.0 pointed to100 students consisting of 3 Muhammadiyah Elementary Schools Surabaya with gender characteristics there were men 65% while women 35%. It showed that the description of the average independent variable and variable with a score of 0.49. Then score T_{table} obtained compared to the value of T_{table} with a score of 5.06 and T_{table} with a score of 1.66 so that it can be concluded that $T_{count\ is}$ greater than T_{table} (T_{table}> T_{table}) then Ho was rejected, so that it can be concluded that T_{table} (T_{count}> T_{table}) then Ho was rejected, so that it can be concluded that there was an independent variable influence (Online Collaborative model) on dependent variables (social skills are reviewed from the initial ability).

Based on the results of the calculation, it was obtained that 1). Obtained an T_{count} value of 5.06 while the T_{table} value was 1.66 (5.06 > 1.66) so that the T_{count} value greater than the T_{table} value then H_0 was rejected and H_1 is accepted. While significance results as low as 0.021, and Sig. < score of 0.05 then H_0 was rejected and H1 is accepted, it was concluded that there was an influenceon the initial capacity on students' social skills. There was an influence on the implementation of the collaborative learning online model on students' social skills with sig scores. $0.004 < \alpha\ 0.05$ means H_0 was rejected and H_1 is accepted. 3) In the analysis of students' initial skills on students' social skills there was no influence with a sig score of $0.113 > \alpha\ 0.05$. Therefore, it can be concluded that there is an influence on the implementation of the online collaborative learning model on social skills, judging from the initial ability of Muhammadiyah Elementary School students in Surabaya.

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