

Learning Make A Match Using Prezi in Elementary School in Industry 4.0

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Abstract: This research is motivated by the development of Industry 4.0 demanding innovation in the learning process in the classroom, but learning outcomes are still low because the teacher still uses a conventional learning model. The purpose of this study was to determine the effect of make-a-match cooperative learning model using Prezi on students' cognitive abilities. This research is quasi-experimental in a non-equivalent control group design. The sampling technique uses cluster random sampling. This research was conducted in the fourth grade of Elementary School 13, Tanjung Barulak, Tanah Datar, Indonesia. The results showed that there is an influence of make-a-match cooperative learning model using Prezi in elementary school. Research implication is as an additional reference for teachers and education practitioners in developing learning models in the classroom during Industry 4.0.

Keywords: make a match, prezi, elementary school, industry 4.0

I. INTRODUCTION

Industry 4.0 is an era of using technology in social life process [1] [2]. Individual must not only recognize technology in life but also must understand technology as a tool to help daily life process. Industry 4.0 has a huge impact on all human life. This impact covers all fields of life. This impact also affects education field [3]. Education in industry 4.0 gets a challenge to produce graduates with the ability to compete globally. This ability includes thinking ability such as the cognitive ability. To answer these challenges, it is necessary to transform education from conventional learning systems to modern learning systems.

This learning transformation requires innovation by a teacher as the main actor in the learning process in the classroom [4]. Teachers must innovate to create interesting learning and improve the quality of learning in the classroom. Improved learning in the classroom can be done in various ways such as using learning models and instructional media [5] [6] [7] [8].

The learning model is a design of the procedure process of teaching and learning activities illustrated as a whole from beginning to end. The learning model is a conceptual framework that described a systematic procedure in organizing learning experiences to achieve learning goals [9]. A good learning plan should have an interesting learning model thus goals can be achieved.

One interesting learning model is cooperative. Cooperative learning model emphasizes student activities in groups of 4-5 people to discuss or work on assignments given by the teacher. Cooperative learning model is a learning model where students learn and work in small groups of 4-6 people collaboratively thus it stimulates students to be more passionate in learning [10].

Each group member must have responsibility for their learning and motivate others in learning or group [11]. Cooperative learning combines several important elements that can improve learning outcomes namely: positive interdependence, individual accountability, face-to-face interaction, social skills, and group processing [12].

Besides, this student-centered cooperative learning is facilitated, guided, directed and trained by teacher as explained in the Law of the Republic of Indonesia No. 14 of 2005 concerning Teachers and Lecturers Chapter I Article 1 (2009) that teacher is a professional educator with the main task of educating, teaching, guiding, directing, training, and evaluating students [13]. The teacher becomes a facilitator in all student learning activities hence learning becomes more directed towards the goals to be achieved.

Cooperative learning models are very diverse, including make-a-match learning model. Make-a-match means finding a partner. This learning model developed by Lorna Curran in 1994 that emphasizes student activities to find a partner while learning about a concept or topic in a pleasant atmosphere [14]. The advantages of a paired learning model (make a match) are: (a) increasing student participation, (b) more opportunities for the contribution of each group member, (c) interaction is easier and faster to create [15].

Implementation of make-a-match cooperative learning model is by using question cards and answer cards, where students are given question cards and answer cards [16]. This make-a-match model can be used in thematic learning in the 2013 curriculum. The 2013 curriculum is also called an integrated curriculum because it combines various elements of subjects [17].

A learning process in the 2013 curriculum is done by students themselves, not by teachers. The teacher only functions as a guide and facilitator. Cooperative learning provides opportunities for students to collaborate with other students in structured assignments guided and facilitated by the teacher [18]. Thematic learning is learning that uses one specific theme to provide meaningful experiences for students. Thematic learning integrates several specific subjects in one theme to provide meaningful experiences for students [19].

Even though the teacher has applied the 2013 curriculum, there are still many teachers who do not understand the 2013 curriculum itself. Besides, to the concept and understanding of applying the 2013 curriculum, teachers find it hard to develop learning with learning techniques and models [20]. Cognitive ability is a benchmark used to see a level of student understanding of learning materials [21].

Low learning outcomes are also influenced by teachers who teach on certain themes relying only on teacher books and student books. A teacher does not develop learning with innovative learning models. Students appear to lack participation in the learning process.

Therefore, the selection of learning models is very important to support better learning outcomes. One of them is a make-a-match cooperative learning model. Learning using this model provides opportunities for students to actively involved in the thinking process and learning activities. This model can also build social relationships (positive interactions in contributing ideas, cooperative attitudes, respecting opinions of friends) in groups to work on tasks to achieve learning objectives.

Also, to the learning model, instructional media play an important role in the process of improving learning quality. Learning media are tools for teaching and learning process [22]. Everything can be used to stimulate the mind, feelings, attention, and abilities of students thus it can encourage the learning process. The existence of media can facilitate learning in Industry 4.0. One of the learning media using technology is a Prezi application.

Media Prezi is an internet-based software or software as a service (SaaS) used as a media presentation and a tool to explore ideas on a virtual canvas [23]. Prezi is an application that can display presentations virtually by sharing many features such as a more varied appearance, many choices of themes, using the ZUI method, easy to

use and easy to share [24]. This is the answer to Prezi as a learning medium that is in harmony with Industry 4.0.

Responding to the challenge that teachers must innovate in the learning process in the classroom, the researcher wants to research by combining the process of learning to make-a-match using Prezi splitting media. Therefore, this study aims to determine the effect of make-a-match cooperative learning models using Prezi learning media on cognitive abilities of elementary school students.

II. METHOD

This research uses quantitative research. Quantitative research is research by collecting data and analyzing it in numbers [25]. This type of research aims to see the effect of a treatment given to the sample by using a quasi-experimental design and control group design [26]. The sample used was fourth-grade students at Elementary School 13 Tanjung Barulak. The sample was selected using a probability sampling technique with a cluster sampling technique in which choosing samples is not based on individuals but rather based on groups, regions, or groups of subjects who naturally gather together [27] [28] [29]. [13] [14].

The research instrument is a test used to measure something in certain circumstances with predetermined rules [15]. The instrument used in providing the test was 36 question in objective questions with 4 answer choices. Questions are arranged in the order in which the material is taught. The class is divided into two, namely a control class and an experimental class. Experimental class is students who learn using cooperative learning models of make-a-match and Prezi media. Control class is students who learn using cooperative learning model of make-a-match without using Prezi media.

III. RESULT AND DISCUSSION

The study was conducted by doing prerequisite tests namely normality and homogeneity tests. Normality test aims to see whether the data are normally distributed or not [30]. The normality test results can be seen in the Table 1.

Based on the above table, it can be seen that $L_{count} < L_{table}$ thus it can be concluded that the two data are normally distributed. After that, Homogeneity test is performed. Homogeneity test aims to see whether the variance comes from a similar sample or not [31]. The results can be seen in the Table 2.

TABLE I. TEST FOR NORMALITY

No	Sample	N	L Count	L Table	Calculation results
1	Experimental class	22	0,1549	0,173	Normal
2	Control class	22	0,1521	0,173	Normal

TABLE II. HOMOGENEITY TEST

No	Sample	N	F Count	F Table	Test results
1	Experimental class	22	1,0729	2,08	Homogeneous
2	Control class	22			

Homogeneity test results of posttest value indicate that L count is smaller than L table so that it can be concluded that experimental class and control class have homogeneous variances. After the homogeneity test was carried out, then a hypothesis test was performed using a T-test considering the data was quantitative and interval

data, data were normally distributed, while the two samples were free or unrelated. Criteria of the t-test are if the value of $t \geq t_{table}$ then H_a is accepted and H_0 is rejected. If t- value of $t \leq t_{table}$, H_a is rejected and H_0 is accepted. The results can be seen in the Table 3. The results of post-test hypothesis show that t-test value $\geq t$

table thus it can be concluded that there is a significant influence on using a make a match cooperative model using Prezi media on cognitive abilities of elementary school students. After the hypothesis is tested, the N test is carried out. The Ng test aims to show an increase in students' cognitive abilities before and after treatment. The results can be seen in the following Table 4.

The gain test results show that cognitive average of students in experimental class and control class has increased. Make a match learning is cooperative learning where students learn in groups in heterogeneous groups [32]. Make a match learning asks students to look for pairs of cards before the deadline, students who can match the cards are given points [33]. In conducting the research, it can be seen that students are very enthusiastic in learning process thus learning becomes uplifting and far from

saturated. This is due to a make-a-match learning done collaboratively between students and active learning, consequently, it can bring up student excitement in the learning process [34] [35]. Besides, in the learning process, students are seen working together to find a suitable pair of answers, it looks like students support each other to find the answer pair. This is because make-a-match can increase collaboration between students [36]. Make a match is also effective learning to save a teacher's time in delivering learning [37]. Students are active in exploring information relating to the ongoing lesson. Another factor support improvement of students' cognitive abilities is that with active learning to find the right answer pair, students will more easily understand the material, due to the encouragement of students' motivation in understanding correct information [38].

TABLE III. T-TEST

No	Sample	N	T Count	T Table	Test results
1	Experimental class	78,89	3,0852	2,018	Ha accepted and Ho rejected
2	Control class	67,34			

TABLE IV. N GAIN TEST

Class	Pre-test	Post-test	<g>	Criteria
Experimental	58,75	79,89	0,9948	High
Control	55,56	67,34	0,4819	Medium

Also, using Prezi is very helpful in delivering information in the learning process. Prezi is a software to display or present material with various ways thus it won't make students bored while learning. Prezi is very important in improving the cognitive abilities of students in this study. Prezi makes it easier for students to understand the material explained by the teacher [39]. This is because Prezi can present the material as a whole or in detail hence the material can be viewed simultaneously and thoroughly. In Prezi, presentation is carried out as a whole in one screen [40].

This has a good effect on making students remember the material presented previously. Besides, features in Prezi can combine text, images, and videos. This is very suitable for child development stages during a concrete operational period, where students learn from concrete or tangible objects [41]. Moreover, Prezi can present a variety of learning to increase student motivation [42]. Prezi is very appropriate to be applied in Industry 4.0 because it changes teacher-center learning into student-centered learning. Therefore, the combination of using make a match and Prezi can answer the challenges in Industry 4.0 era which can make innovative learning interesting and improve the cognitive abilities of elementary school students.

IV. CONCLUSION

The results showed that there is an influence of make-a-match cooperative learning model using Prezi in elementary school.

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