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Published online: 03 Mar 2020.

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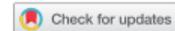
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Geographical students' learning outcomes on basic political science by using cooperative learning model with Group Investigation (GI) type in State University of Medan, Indonesia

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ABSTRACT

Based on the report of the United Nations Development Program (UNDP), the quality of human resource in Indonesia is very low which can be seen from Human Development Index (HDI). In 2013, HDI of Indonesia is at the ranking of 121 from 187 countries. Cooperative learning model can be used to increase the quality of Indonesia people for the future. In studying, a person must have a partner or a friend so that the friend can be invited to solve a problem. So here, cooperative learning is learning which groups students into small groups in the classroom in order to work together. Based on the result, it is proved that the result of learning the basic of political science students treated by GI cooperative learning model is higher.

KEYWORDS
Cooperative learning model; Group Investigation; political science

Introduction

Education is one of the efforts to improve the ability of human intelligence, thus he is able to improve the quality of his life. So, to create the highest quality of human resources, education is becoming an important factor to be considered. The importance of education is also reflected at MPR No. II/MPR/1993 which states that the national education aims to improve the quality of Indonesia people that is religious people, and pious to God Almighty, noble character, has high personality, discipline, work hard, responsible, independent, smart, healthy, physically and mentally healthy.

But in reality, the quality of education in Indonesia is not experiencing significant progress. Some publications issued by UNDP, ADB, Asian Week, including demographic Population numbers about employment, indicate that the quality of education in Indonesia is still low. Until now, the education level of the workforce in Indonesia is still dominated by worker graduate from primary school as much as 46.95%.

Based on the report of the United Nations Development Program (UNDP) (2014), the low quality of human resource in Indonesia can be seen from Human Development Index (HDI). In 2013, HDI of Indonesia is at the ranking of 121 from 187 countries. At the last 20 years, based on the graph, HDI in Indonesia is below than HDI in the world, even in East Asia Pacific environment.

This low quality of education in Indonesia indicates that it needs a serious effort from all parties to improve the quality of education in Indonesia. This effort can be

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a reality if there is an improvement of facilities and infrastructure, increasing teacher's quality and curriculum improvement. In addition, it needs government and society role such as doing research and development, training and education teachers, as well as the provision of facilities and infrastructure of education both formal and non-formal education.

Review of literature

Cooperative learning model

At first, cooperative learning model appears at the beginning of the AD century where philosopher who argues that in studying a person must have a partner or a friend so that the friend can be invited to solve a problem. Cooperative learning is a learning which groups students into small groups in the classroom in order to work together. Arzt & Newman (1990) as quoted by Miller and Peterson (n.d.) define cooperative learning as a small group of students who works together as a team to solve problems, complete the task, and achieve goals.

Furthermore, students in cooperative learning model learn some activities and work collaboratively in small groups consisting of four to six people to stimulate learners to be more passionate in studying. According to Lie (2008), cooperative learning model or also called mutual help learning is the system of teaching which gives an opportunity to students to collaborate with peers in completing structured task.

Another opinion suggests that cooperative learning model is a series of learning activities conducted by students in a particular group to achieve the learning objectives which have been formulated. From the opinion above, it can be concluded that a series of cooperative learning model is learning in which learners are organized in small hetero-geneous groups to work together solving the problems and tasks in order to achieve the learning objectives which have been formulated.

Each member of the group in cooperative learning works together to complete the task to achieve common goals. Cooperation groups show that the succeed group is determined by the results of study together in groups, so that in one group it is going positive dependence. In addition, because each individual in the group is responsible as indivi-duals, then each member has the opportunity to contribute to the success of the group. Through study groups, in particular, learners serve as a source of learning to each other, share and gather information and help each other to achieve success. In other words, the students are as peer tutors for the group. Sometimes, learners more easily obtain informa-tion from their peers because of shame or embarrassment to ask the lecturer or teacher.

Cooperative learning model is based on the theory of constructivism, which comes from the concept where learners will be easier to learn a difficult concept when they do mutual discussions with his friend. The essence of social and peer group become a major aspect of this model. In terms of the psychology learning, cooperative learning is influenced by cognitive psychology holistic which emphasizes that learning is essentially the process of thinking. In cooperative learning, it does not only focus on what the learners do but also what they are thinking during the learning. Participants will be able to construct their own knowledge by interacting other learners, so that learning is not centered on teachers but on the learner. Educators in cooperative learning acts as a facilitator, provider of learning resources and supervising learners in a learning group.

Cooperative model does not evolve from a single theory but it evolves from the work of psychologists. Many theories supporting a cooperative learning include psychological theory of cognitive-constructivist (Piaget and Vygotsky, 1978) and social psychological theories (Dewey, 1938). According to the theory of cognitive-constructivist, Piaget argues that learners have the innate curiosity prompting him to interact with his environment. Social interaction with peers, especially in expressing ideas and discussion, will help to clarify the results of his thinking and makes the results more logic an thinking objectively.

Vygotsky's theory (1978) has implications that cooperative learning group is heterogeneous in terms of academic ability, and the importance of the responsibility of students in their learning tasks. Furthermore, according to the social psychology, a class is a mirror of society at large and has a function as a laboratory of learning in real life. Basically cooperative learning model is developed to achieve three objectives of learning; the result of academic learning, acceptance of individual differences; and development of social skills. In an effort to improve learning outcomes, cooperative learning model excels in helping students understand difficult concepts. In addition, cooperative learning provides opportunities to students with diverse backgrounds and different conditions of mutual cooperation in completing the task. It means that learners are taught to respect each other.

Cooperative learning model has five elements that distinguish it from a regular group study. Johnson and Johnson (2018) put forward five elements of cooperative learning in order to achieve maximum results, namely, (1) positive interdependence, (2) individual responsibility, (3) face to face, (4) communication between members, and (5) evaluation of the processed group process. Each member of the group works together to complete the task to achieve common goals. Cooperation groups show that succeed group is determined by the results of studying together in groups; so in one group there is positive dependence. In addition, each member of the group has an individual responsibility; then, each member of the group has the opportunity to contribute to make the group succeed.

Each of the learning activities included in the cooperative learning activities always involve the interaction and communication between educators and learners with diverse characteristics. According to Banks et al. (2007), educators must therefore be prepared for this, primarily related to the planning and implementation aspects as well as efforts to increase the academic achievement of the participants.

Interactions that occur between members of the group can help learners improve understanding of a concept because it tends to be easier to communicate with their peers through simple language and it is easily to be understood when compared by communication with teachers/lecturers. Evaluation emphasizes cooperative learning groups, which means the success learners achieve learning objectives which are highly dependent on the outcome of the study group.

In addition to the five elements that distinguish cooperative learning model with a working model of the group, there are four characteristics of cooperative learning according to Slavin (2010) and Chambers quoted by Kurnia Qori (2015), namely:

(a) learning team, the team is where the goals, therefore the team had to make every participant students learn and the team's success is determined by each individual in the team;

(b) based on cooperative management which has four main functions, namely, the functions of planning, execution functions, organizational functions, and control functions;

(c) willingness to cooperate, the principle of working together need to be emphasized, each member not only regulated the duties and responsibilities of each, but instilled the need to cooperate with each other;

(d) collaboration skills, willingness to cooperate then put into practice through activities and events depicted in the skills.

Johnson as it is quoted by Loui (2006) said that the cooperative learning provides several advantages compared by traditional approach:

(1) Improving cognitive ability
   (Increase cognitive achievement);
(2) Increase the high-level thinking skills
   (Promotion of higher-level thinking skills);
(3) Increase customer satisfaction and confidence by helping others
   (Improved self-esteem and satisfaction from helping others);
(4) Developing social skills through working group effectively, including in addressing the conflict and negotiate
   (Development of social skills for effective working group, including negotiation and resolving conflict).

Furthermore, Cuseo and Mc Keachie as it is quoted by Loui (2006) say that such excess occurs for several reasons, especially the presence of:

(1) Motivation:
   Interaction with friends in one working group provides stimulation and mutual support, including pushing for the growth of personal responsibility; students still gains control in making conclusions/decisions in a cozy atmosphere (in a non-threatening environment),
(2) Cognition:
   Students to be actively involved in developing strategies for instance formulate problems, to explain, to make a summary, with words -said his own, along with his colleagues in the group on the level of same experience.

Loui (2006) continues that most major advantages of working group is that students learn how to work in a team with people who may come from different social backgrounds, including cultural values. Students learn how to reconcile the various values that smelled of conflict, and how to integrate the fields of different skills in order to achieve a common goal. Skills to work in a team are very important in almost any kinds of career. Various areas of work, e.g., trade, government, industry, and others, require working within the group (team) to complete the various projects or in decision-making. Students who have teamwork skills in an academic setting, the prospective resources will be more readily entered into a professional world later in the day (much better prepared for professional careers).

Table 1. The research and work flow development in cooperative learning.

Researcher and Developer	Year	Method
Johnson & Johnson	In middle of 1960	Learning Together & Alone
DeVries & Edwards	In the beginning of 1970	Teams-Games-Tournament (TGT)
Sharan & Sharan	In the middle of 1970	Group Investigation
Johnson-Johnson	In the middle of 1970	Constructive Controversy
Aronson & Associates	At the end of 1970	Jigsaw Procedure
Slavin & Associates	At the end of 1970	Student Teams Achievement Divisions (STAD)
Cohen	In the beginning of 1980	Complex Instruction
Slavin & Associates	In the beginning of 1980	Team Accelerated Instruction (TAI)
Kagan	In the middle of 1980	Cooperative Learning Structure
Stevens, Slavin & Associates	At the end of 1980	Cooperative Integrates Reading & Composition

In a modern world today, it requires a capable human being of working in a team, but he has a high individual ability. Muaddab (2011) informs that when students work in teams, they find the skills to plan, organize, negotiate, and build consensus on issues task to be done, who is responsible for each task, and how the information will be collected and presented. Such skills are skills that are critical to the success in his life in the future.

There are many types of cooperative learning now. These types are developed differently by experts although the basic principle is unchanging. Robert Slavin (2010) Johnson & Johnson (2018), Spencer Kagan (1994) are some experts who have developed cooperative types. All types of cooperative are developed based on theory and research in psychology. Chronology of the development of cooperative learning model has been developed since the 1960s, which can be seen in Table 1.

Cooperative learning by Group Investigation (GI) model

Group Investigation (GI) developed by Sharan & Sharan (1992), at Tel Aviv University, has philosophical roots, ethical, and psychological writing in accordance with the views of Dewey in cooperation of the classroom as a prerequisite to be able to face the problems of life. The teacher's role in GI is as a resource and facilitator forwarding processes that occur in groups. Teachers/lecturers monitor the activities carried out and help the group in distress.

According to Tan et al, as cited by Zingaro (2013), the substation built on four theories of origin is the Dewey's education philosophy, dynamic group, cognitive psychology, and constructivist theories of motivation. According to Dewey (1938), the purpose of education is to build a community which has a responsibility to work together, to solve problems, and to build knowledge. The dynamic group shows learning and solving problems that arises when working in groups. Constructivist perspective confirms that knowledge is gained through the interaction of a person with the environment and those around them. Intrinsic motivation makes GI different from regular learning. The purpose of learning is to make the GI students to learn because they are attracted to the subject because of the outside demands.

GI appropriates to be applied to integrated study project relating to mastering, analyzing, and synthesizing information with respect to efforts to solve problems, which have multi-aspect. GI learning requires learners to take part in learning, in the planning process, sourcing, investigating, and reporting on the results of the investigation group.

Educators, in this case, act as a resource and facilitator who help each group to manage tasks, facing the group interaction and performance relating to the task group.

GI cooperative learning model has four important components: investigation, interaction, interpretation, and motivation. Investigation means any focused groups in the process of finding about a topic that has been selected. Interaction is the hallmark of all the cooperative learning method that allows each learner to develop ideas and help a friend to learn. Interpretation arises when each group discusses the findings of each member in the group to obtain the same conclusion and understanding. Intrinsic motivation is given to students with rewards and freedom in the investigation.

Learners in the cooperative GI type involve in the learning plan in the classroom, both on the topics studied and ways to start their investigation. This approach helps students to build communication skills and skill to proceed group or competencies fostered first before using this strategy. GI cooperative learning model provides an opportunity for learners to play an active role in planning what you want to learn and how to learn, including contributing to the searching for the source and divided it. Each group discusses what they are interested in and agreed upon. Each member of the group investigation is also instrumental in planning how the problem is resolved, divide the tasks and roles. The final stage of learning at each group summed up the results of work and presents it to the class.

Sharan, as quoted by Joyce, Weil, & Calhoun (2011), reports that the higher the power of cooperative groups, there will be more positive energy that learners in tasks or hang out with their friends. The more diverse the group's activities, the more information are obtained. Increased information obtained also increases the ability of learners and will improve the achievement of learners.Slavin revealed six stages in the implementation of cooperative learning model GI.45; these stages can be seen in Table 2.

At the level of forming group and selecting topics, each learner should identify and select the sub-topic of problems in accordance with their respective interests. Among them, learners should exchange their opinions and ideas to determine which topics will be discussed in their group. Educators in this case provides flexibility and do not try to restrict the ideas and proposals of learners. It is an indication that the learning process is based on the needs of the group, prior knowledge and experience of each member of the group individually.

Research method

The purpose of this study was to determine the differences in the influence of learning models and learning styles on learning outcomes as the dependent variable. In addition, to find out whether there is an interaction between these independent variables affects learning outcomes. This sample of the research is all of the geographical students at first semester, state University of Medan (Unimed), academic year 2013, with the total of 174 students. This research used descriptive qualitative method.

Discussion

Sample of the research

This sample is separated at five classes as follows:

Table 2. Phase of GI cooperative learning model.

No	phase	Lecturer's activity	Students' activity
1.	Set/express purpose of learning Forming Group Choosing a suitable topic (for each groups)	Lecturer gives all opportunity for students to form their own group based on interest and heterogeneous Lecturer assists in gathering information and facilitates the setting Presenting a set of issues and problems to be topic	Students form their own group consisting of 5–6 peoples/groups Students identify and examine the issues and problems posed by the use of learning resources available and each group chooses a sub-topic to be discussed.
2.	Planning the investigation	Lecturer gives clues how should each groups working	Each group focuses sub topics that have been Formulate the problem, discuss how to solve the problem, determine the resources required to conduct an investigation
3.	Planning the investigations	Lecturer rounds and gives instructions to the group discovering the problem	Each groups carries out a plan that has been prepared and agreed Each group gathers information, analyzes the data, evaluates information and makes conclusions Each member takes part in the investigation activities and exchanges thoughts and ideas, discusses, clarifies all ideas
4.	Preparing reports	Lecturer provides guidance and ensures each member of the group involved	Each groups prepares the essential messages of their project Each group discusses and plans what will be reported, and how they will make their presentations Performing division of tasks to prepare reports and conducting presentations
5.	Presenting the final report	Lecturer guides and facilitates the presentation of the report and directs the activities of class discussion topics covered so stays focused and not get stretched	Each group presents report presentation in the form of interactive and attractive The other groups are given the opportunity to respond the presentation
6.	Evaluation of the achievement	Lecturer gives feedback on the results of each group reports Lecturers and students collaborate to evaluate teaching-learning activities.	All students give each other feedback on topics that have been studied, the tasks assigned and the activities that they have done in the investigation activities at once

The sample of the test score results to learn the basics of political science students taught by cooperative learning model. which can seen in Table 3. The results of learning the basics of political science for GI cooperative learning model are shown on Table 4.

It shows that approximately 37.84% score from the result of learning the basics of political science learned by cooperative model of GI type is under the average, where 21.62% is equal to the average and 40.54% is above the average. Furthermore, the frequency distribution of scores result of learning the basics of political science with GI cooperative learning model can be described as follows:

The Figure 1 shown the influence of interaction between models learning and learning styles towards learning outcomes college student.

Table 3. First semester students, geographical program academic year 2013/2014.

No	Class	Total Frequency	%
1.	A	37	21.3
2.	B	42	24.1
3.	C	41	23.6
4.	D	27	15.5
5.	E	27	15.5
	Total	174	100.0

Table 4. Frequency distribution results in basic learning of political science for cooperative learning in GI model.

No	Interval Class			F_i	F_i relative (%)
1	25	-	26	4	10.81
2	27	-	28	5	13.51
3	29	-	30	5	13.51
4	31	-	32	8	21.62
5	33	-	34	6	16.22
6	35	-	36	5	13.51
7	37	-	38	3	8.11
8	39	-	40	1	2.70
Total				37	100.00

Frequency
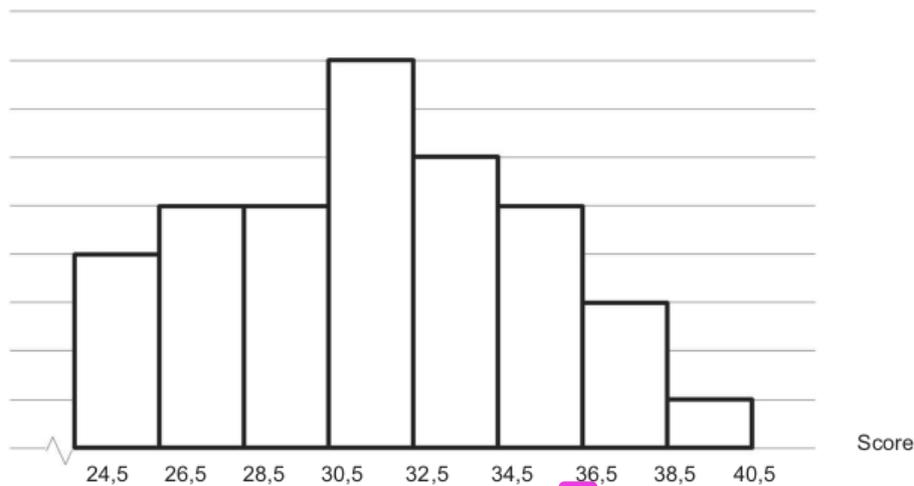
Figure 1. Histogram on the students' result of basic learning in political science learned by cooperative learning model with GI type.

Besides the learning model as a factor coming from outside students, there are factors which come from within a student affecting their learning outcomes. Factors like motivation, personality, self concept, thinking style, and learning style are contributing factors influencing how a person learns, receives information, solves problems, faces challenges and gets along and works

together with classmates. As already mentioned, in designing learning models in class, the lecturer must consider things which can influence learning outcomes, such as material characteristics and student characteristics. Taking into account the characteristics of students, lecturers can optimize learning outcomes obtained by students.

The learning model applied turns out to give a different effect on college student. Differences in student characteristics influence the way they receive information, process messages, and interact in class. Model learning can be suitable for certain student characteristics but may not be too suitable for students with different characteristics. Match and mismatch in here is interpreted as the optimal or failure of the model. Certain learning motivates students learn better and achieve learning goals more effectively and efficiently.

Conclusion

Based on the result, it is proved that the result of learning the basic of political science students treated by GI cooperative learning model is higher. The results obtained student learning is influenced by various factors. These factors can come from outside or from within the students themselves. One of the factors that come from outside of the student is learning model designed by the lecturer. The learning model becomes one of determining the success of the class. Model applied learning in the classroom determines whether or not students are motivated to learn. The success of a lecturer to design and implement a model of learning in the classroom will ultimately affect the achievement of learning goals and will support for the success of students.

The learning model needs to be designed carefully so that the implementation which is truly effective and efficient helps students learn and achieve learning goals. In designing the learning model, there are a few things into consideration. Some things need to be considered in choosing a learning model that will be applied in the classroom, for example the characteristics of learners, objectives to be achieved, the characteristics of the material presented, educators, time, facilities and infrastructure, learning resources are available, and costs required to implement the learning model.

Material submitted becomes one of the things to consider in selecting a learning model. The material contains facts and concepts will be more easily delivered with conventional learning models such as direct instructional model. In addition, the cooperative learning model also helps students to understand the material presented. The materials science course requires other considerations in the selection of the learning model used. The learning material requires not only just knowledge alone but also the understanding and significance of the material. Thus, the learning model chosen must be able to accommodate the learning objectives which will be achieved.

The basic material of political science, including social science, examines the material of the basic concepts of political science theories ranging from the definition, meaning, the nature of politics and political science and basic concepts, as well as the systems approach and relationship of political science with other sciences.

Each member of the group in cooperative learning should work together to complete the task to achieve common goals. Cooperation groups show that the succeed group is determined by the results of study together in groups, so that one group is going positive dependence. In addition, because each individual in the group has a responsibility as individuals, then each member has the opportunity to contribute to the success of the group.

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