

ARTICLE

COLLABORATIVE LEARNING IN HIGH SCHOOL

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ABSTRACT

The era of the industrial revolution 4.0 is a marker in the 21st century that requires the world of education to improve itself to be able to improve the quality of various aspects. One of them is creating students who have 4C (Creativity and Innovation, Critical Thinking, Communication, and Collaboration) skills. Collaboration has become a trend of the 21st century, the community's need for thinking and working together in solving problems has increased both in the group scope for students and even in the community. Students are challenged to be able to play an active role and contribute to their group by giving opinions and solving problems with the principle of teamwork. Because cooperation is closely related to daily life. Collaborative Learning provides great benefits and influences for students on chemistry learning, if students can apply and run it accordingly; 1) An important element that must be present in the Collaborative Learning model is the existence of group responsibility; 2) Appropriate collaboration should be implemented by prioritizing teamwork and discarding the individualistic sense that exist. Collaboration is an interaction and personal lifestyle in which individuals are responsible for their actions, including learning to respect the abilities and contributions of their group members; 3) Chemistry learning will be carried out well if group members discuss the results of their discussions in a consensus. Collaboration is an educational approach in teaching and learning that involves groups. Collaborative learning must become more developed than competitive methods.

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1. Introduction

The 21st century is marked by the era of the industrial revolution 4.0 as a century of openness or a century of globalization, meaning that human life in the 21st century has undergone fundamental changes that are different from the system of life in the previous century, it is said that the 21st century is a century that asks for quality in all aspects, one of which is human resources (Sukartono, 2019). This also demands a very large change in national education to produce students as quality human resources. Collaborative learning is a trend in the 21st century Collaborative learning is learning that involves students in a group to exchange ideas and develop related ideas with learning materials to achieve common goals. This article tries to provide concepts regarding collaborative learning and illustrates the benefits of following this learning model.

Cooperation is closely related to everyday life. In chemistry learning both in material and practice, there needs to be cooperation. This is inseparable from the definition that states that humans are

social creatures who need each other. The need for society to think and work together in solving a problem over time continues to increase (Marjan, et, al, 2012) Collaborative learning is needed to maintain an attitude of cooperation in humans.

P21 (Partnership for 21st Century Learning) describes a learning framework in the 21st century that requires learners to have 4C (Creativity and Innovation, Critical Thinking and Problem Solving, Communication, and Collaboration) skills. These skills are needed considering that students are currently in the modern era which is controlled by the rapid flow of information (Sutarano, Setiawan, Suhandi, Kaniawati, & Hamdani, 2018). So that students need mastery of processing useful information well. Collaborative Learning is based on the idea that learning activities should encourage and help students to be actively involved in building knowledge, thus achieving a deep understanding. In this case, learners are seen as the center of learning activities. Educators can assist learners in working together successfully as part of a team and develop skills and improve the quality of work in a team that is critical in the ability to collaborate (Sudarman, 2008 : 95).

Collaborative Learning is a personal philosophy more than just a classroom learning technique. Collaboration is essentially a philosophy of interaction and human lifestyle that places and interprets cooperation as an interaction structure that is designed as well as possible to facilitate collective efforts in order to achieve common goals. In collaborative learning, the teacher's function is more directive or learning manager, on the contrary, it is the students who must be more active. In collaborative situations, learners interact with empathy, mutual respect and acceptance of each other's shortcomings so that learners can face various changes and learning guidance together. Collaborative learning is a learning model that requires students to work together in their groups to improve their understanding (Widjajanti, 2011).

Collaborative learning is often equated with cooperative learning (Johnson & Johnson, 2009), but basically has a different definition. Collaborative learning itself has characteristics that include the division of roles and different layers of learning when working on tasks and in the end, each group member will exchange different and complementary information at the end of the learning process (Dillenbourg, et.all, 1996). 21st century learning has a significant influence on the learning process in the classroom today. Collaboration allows the process of sharing innovations to happen faster and information about students' talents and progress is more immediately known. Teachers for the 21st century are expected to foster a sense of knowing and inspire students to explore different applications for the knowledge and skills they have learned (Zubaidah, 2016).

The use of collaborative learning in a learning process is based on the principle that knowledge is a social artifact that should be able to generate creativity by a social process or more than one person (Bruffee, 1984). In addition, the notion of learning is a constructive and active process, so an intellectual

process is needed that is built on the basis of knowledge that has been previously possessed by the learner. (Smith & MacGregor, 1992). The main needs of the cooperation process in a study group are expected to be able to make a positive relationship between students and psychologically will make students healthier. (Johnson & Johnson, 2009). In a process of implementing collaborative learning, it is important to note that each individual brings the knowledge possessed by them into an environment where there are different types of ideas that interact with each other in terms of knowledge, Janssen et al. (2010) suggest that collaborative learning is much more important. when learners are equipped with cognitive abilities. This happens because in the learning process that involves more than one person can generate positive motivation because there is hope to achieve good results in a group to carry out activities such as discussing their writing with peers and the benefits of sending and receiving feedback before students present in front of the class (Walled, 2016).

2. Results and discussion

According to experts, there is a difference between students who study alone and students who study in groups. Collaborative learning provides an opportunity for learners to engage in discussion and take risks in processing their own teaching materials, thus making them critical thinkers. In collaborative learning systems, learners are challenged both socially and emotionally to think critically in developing their ideas. (Woods and Chen are cited in Johnsons,1994) stating that for collaborative learning efforts to be more productive than competitive methods, it must meet five things, such as: Positive interdependence, Direct interaction between students, Individual accountability, Social skills, Effectiveness of group processes.

Collaborative Learning can provide benefits in life, namely: social benefits, psychological benefits and academic benefits. The use of Collaborative Learning which is included in the trending learning in the 21st century has a significant influence on the learning process. The learning process is required to be more interactive both between individuals and other individuals, students with teachers, and students with varied and innovative teaching materials.

In this 21st century learning, teachers are facilitators and those who must play a more active role are students. Collaborative Learning provides benefits in the psychological, academic, and social fields. Based on the current educational framework, competition is judged on the basis of cooperation between groups. Each group must be able to complete the work and tasks that have been assigned in groups and reduce the individualistic level. Students must actively participate by giving their opinions and ideas, so that in group work not only one member gives his ideas and ideas, but all members are actively involved in group cooperation. Group members should help each other's group members who are not yet used to being actively involved by embracing their members.

Collaborative learning includes social skills and learning abilities. The learning combines three concepts, namely individual accountability, group benefit, and equal achievement of success (Hosnan, 2014: 309). In the collaborative learning model, students are required to work together and take advantage of each other's advantages between members in a discussion group (Walled, 2016). This discussion group will solve problems regarding the learning materials provided by the teacher. The concept contained in Collaborative Learning leads to regular group meetings to work together and can provide collaborative value for learners to respect others, accept any differences of opinion that exist in the group, and can contribute to members Group.

The existence of tasks entrusted to the group gives a sense of responsibility for both the group and the group members to complete the task. Consensus or joint decisions are also important points that must be contained in Collaborative Learning. As well as affirming that the Collaborative Learning model makes students actively involved and the results of discussions and knowledge that can be obtained will not disappear or forget casually because of good group cooperation. Even though learners are in a group, the abilities of each individual must still be developed because in principle the collaborative learning model emphasizes cooperation between group members.

The collaborative learning model in the era of the Industrial Revolution 4.0 can use social media can be applied to several platforms that provide a means of discussion between members (Rahmi, 2016). For example, learners can use the Facebook Groups and WhatsApp Groups features to discuss concepts and issues relevant to their educational theme. In addition to discussing and collaborating, members of the group can also share tips and tricks in learning. As for class video convergence that can be done with Google Hangouts, it is a platform to video chat with many people at the same time. With Google Hangouts, students who can't make it to class can still get subject matter and participate remotely. In addition, outside of study hours students can also form video conferences about learning materials. Yang et al. (2011) found that an interactive blog is able to play an important role in interaction with peers among students who are interested in better academic performance.

Collaborative Learning has become a 21st century trend. The need for the community to think and work together in facing and solving critical problems has increased from the scope of the group to the scope of society. Therefore, collaboration and cooperation in each group are needed so that the desired goals can be achieved and carried out properly. In the learning process, most students think that chemistry subjects are difficult, students are still passive and have difficulty analyzing problems. Thus causing the activeness and creative thinking ability of students is still low. Therefore, a collaborative learning model is needed that can make a good contribution to students' activeness and creative thinking ability (Ningrum, 2016).

There are many benefits that can be obtained from CL (Collaborative learning). Some of the advantages gained include: students can be actively involved in interacting with each other regularly in a directed model, they are able to understand the differences that exist and learn how to solve social problems that may arise. The concept of Collaborative learning provides global challenges to the current generation and needs attention such as learning needs that will later be needed by students in the process of their future lives. 21st century learning is student-centered and the educational process must be developed collaboratively. Collaborative learning process needs to be given free and more space to students to be able to expressing itself in a learning environment as a subject as well as a necessary object. .

In this case, each individual should throw away the individualistic nature. This is because in the Collaborative Learning model, good cooperation in the group is needed. Because each individual has different opinions as an educationist we must also accept the various opinions that exist and must be receptive. Collaborative Learning is based on the idea that learning activities should encourage and help students to be actively involved in building knowledge, thus achieving a deep understanding. In this case, learners are seen as the center of learning activities. Educators can assist learners in working together successfully as part of a team and develop skills and improve the quality of work in a team which is very important in the ability to collaborate (Sudarman, 2008: 95).

The Inquiry Approach and Discussion Method are also one of the things that are almost the same relation to the Collaborative Learning model. This is because the Inquiry approach leads to the activeness of students to be more active in the learning process. This inquiry approach also applies the concept of working together in groups and actively asking if there is something unknown. A combination of discovery-based learning modalities and inquiry, since students are asked to investigate and explore problems rather than simply being given information to remember and understand or simply given procedures to follow and apply (Alfieri et al., 2011; Justice et al., 2009). Furthermore, inquiry-based learning has been linked to the development of higher-order thinking skills from Bloom's taxonomy (cognitive realm), including analyzing, evaluating and creating (Anderson et al., 2001; Domin, 1999; Justice et al., 2009).

The discussion method is also a method that applies the concept of student activity to cooperate with group members by discussing a problem and deciding it through consensus together with concluding various opinions that have been described and given by each group member, so that Common goals can be achieved. The main principle of cooperation is to argue that one with the other among those who learn becomes a learning resource so that they can help each other in the learning process.

3. Conclusion

Collaborative Learning is learning that involves students in a group to exchange ideas and develop ideas related to learning materials to achieve common goals through social interaction under the guidance of educators so that students can be more confident, think critically and appreciate between group members and be able to think at a high level. Collaborative Learning provides great benefits and influences for students on chemistry learning, if students can apply and run it accordingly; 1) An important element that must be present in the Collaborative Learning model is the existence of responsibility groups, Collaborative learning models in the era of the Industrial Revolution 4.0 can use social media can be applied to several platforms that provide a means of discussion between their members; 2) Appropriate collaboration must be implemented by prioritizing teamwork and discarding existing individualistic feelings. Collaboration is an interaction and personal lifestyle in which individuals are responsible for their actions, including learning to respect the abilities and contributions of their group members ; 3) Collaborative learning will be carried out well if group members discuss the results of their discussions in a consensus.

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