

# Building Creativity through Collaborative Learning

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**Abstract:** Creativity is an important dimension of life, both individually and socially because the existence and progress of a social unit is very dependent on the creativity of the individual. Thus, the formation of individual creative students carries an important role. Efforts to form creative students need the right strategy. This study aims to compare the level of student creativity in collaborative learning with conventional learning. This study uses quasi-experimental design with the type of pretest-posttest design. This research was conducted on 80 students of Elementary School Teacher Education Study Program, Teaching and Education Faculty, Universitas PGRI Ronggolawe Tuban in the Professional Education course. The results of this study indicate there are differences in the level of creativity of students who are taught collaboratively with those who are taught conventionally. Students who were collaboratively taught showed significantly higher levels of creativity than those who were taught conventionally.

**Keywords:** Collaborative Learning; Conventional Learning; Creativity

## 1. Introduction

At this time, the existence of higher education to date seems to still not meet expectations despite improvements, especially to bring students into an era of increasingly fierce global competition is very heavy work. To be able to play a role in global competition, then as a nation we need to continue to develop and improve the quality of its human resources. Improving the quality of human resources is a necessity that must be done planned, directed, intensive, effective, efficient, and productive in the development process. The urgency of improving the quality of human resources has made the government together with the private sector jointly and continuously strive to realize it through various efforts to develop higher quality education [1]. Over the past decade, rapid change has created a new environment that needs to be adapted by various parties in a nimble manner. To support transformation, we need to rethink our approach to learning. The conditions of existing learning development are moving away from traditional classroom-based learning arrangements that are teacher-centered. Developments are happening, learning needs to be tailored to individual needs, available anywhere at anytime and it is necessary to enable students to build their networks. The development of digital tools, especially network technology platforms and social collaboration, has enabled this new learning concept [2]. The demands of life both inside and outside the classroom require creative work patterns.

Perkins defines creativity as follows: (a) creative results are original and appropriate results; and (b) creative people - people with creativity- are people who routinely produce creative results [3]. Creativity can be the result of individual cognitive activities or group processes[4], based on social interaction and social interdependence theory [5], the relationship of learning styles and collaborative creativity is partly mediated by the convenience of the learning process [6].

The process of creative thinking develops along with the variety and complexity of the problems encountered. The more diverse and complex a problem, the more thought the process develops. A problem may be a reduction of

problems that have been solved, but also sometimes is something that is still new. This of course requires creative thinking. This way of thinking is used to find alternative solutions to problems, then choose which one is considered the most appropriate to answer the problem. In this case the connection between creativity and problem solving appears. The preferred way of individuals working with learning styles is also an investigation of an area that has developed to the point where it is possible to describe and observe what is sometimes very large in the ways in which students can make progress according to the way in which they are expected to work [7].

Creative way of thinking does not mean having to think to find something new, but more emphasis on dynamic forms of thought. While adult way of thinking, is an absolute requirement that must be met by a student. The embodiment of an adult way of thinking, among others, can accept the opinions of others, want to admit mistakes if it turns out that his opinion is wrong, can control themselves both in strokes and deeds. How to get mature for students is a must, given that after the student will really become an adult who must be able to act wisely and wisely.

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Researchers have identified the significant impact of organizational culture on creativity [8]. The role of knowledge in providing with sustainable organizational competitive advantage and the resulting superior performance has received major attention from researchers and practitioners [9]. Empirical findings suggest that collaborative culture has a positive effect on producing contexts for creative ideas [9]. Collaborative learning is an approach in which systems and school leaders build collective capacity 'to create new knowledge that energizes

together; and more schools than being places of good planning and intensity are central to deliberate practice on the part of all teachers who then empower students to do the same [10] and the need for social interaction [11].

Over the past decade, globalization, economic turmoil modification in technology and digitalization have caused unexpected changes and disruptions in many industries [12]. In addition, organizations face a new internal environment due to demographic changes. Employee demands change and they have new expectations, for example regarding the tools and technology provided [13]. According to Lawrence and Lorsch, that in order to remain competitive, organizations need to adapt quickly to external and internal challenges. The speed of adaptation can only be achieved if the organization's strategy, culture, processes, structure and competencies are determined to anticipate change, continue to learn as an organization and provide the knowledge generated to all its members [14].

Condition in the global world also have effect for higher education. Adoption of new technologies and development concepts that exist in the world of work challenges conventional classroom-based learning in tertiary institutions. In addition, conventional tertiary institutions have begun to feel competitive pressure from online education offerings. This development is certainly very disturbing for the processes, products and models of conventional tertiary institutions. Social interaction plays an important role in the development of cognition. Many approaches to teaching and learning have been developed to promote social interaction [11] [15]. Collaborative learning refers to the process of social interaction in which two or more students actively work together towards shared learning goals and are involved in the process of joint development [16]. Furthermore, students provide new knowledge for each other, provide feedback, support each other. Involvement also while taking responsibility for their own learning process [17].

Likewise, a deeper understanding of the mechanisms underlying collaborative learning is needed to understand the complex relationships and interactions between tasks, students, and group characteristics. These characteristics, however, often interact (for example, the impact of group members' prior knowledge on their achievements during collaborative learning can depend on whether they collaborate in homogeneous or heterogeneous groups) [18]. Likewise, based on cognitive charge theory, it is said that learning by an individual becomes less effective and efficient than learning by a group of individuals with increasing task complexity [19]. Collaboration is especially useful when students need to access resources from other group members to complete assignments. Accessing these resources enables students to explore other people's ideas, gain a more complete understanding of the problem and enhance collaboration and thinking of critical [20].

The results show the effectiveness of collaborative learning, but also information the challenges associated with it [21]. Based on these findings, each references identifies a large number of elements that need to be considered when

planning collaborative learning settings. Among the most important are the elements of collaborative tasks need to be complex and structured in a way that allows for productive interaction [22]. Another element to consider is also in designing collaborative learning of students' active roles [19], peer interaction as a mediation of perseverance due to collaborative learning [23]. However, effective and efficient collaboration requires not only vary design elements. In the context of collaborative learning, its role changes from primarily becoming a domain expert to facilitating the learning process [2] identifying and negotiating various perspectives, including comparing results [20]. Specifically collaboration is also useful when students need to access resources from other group members to complete assignments, e.g. different domains of knowledge. Accessing these resources enables students to explore other people's ideas, gain a more complete understanding of the problem and enhance collaboration and critical thinking [20].

Building creativity requires ways of working that provide more freedom for students when doing the learning process. Collaborative learning is possible to provide more freedom for students to actively learn creatively compared to learning in conventional learning settings that tend to dominate activeness lies on the part of the teacher. And, it turns out that many students prefer collaborative learning to self-study in class. [24]. For this reason, it is necessary to arrange a learning strategy which is suitable for building creativity in students. Examining the effectiveness of learning that provides more opportunities to build creativity is the focus of this research.

## 2. Research Methods

This design research was using quasi experiments [25]. The design was chosen because the determination of research subjects in the treatment group and the control group could not be chosen randomly [26], because class conditions did not allow it to be changed. The variables in this study consisted of independent variables and dependent variables. The independent variables in this study are collaborative learning strategies and conventional learning. The dependent variable is creativity. The control variables in this study are used to ensure the results of the treatment in the experiment are valid, as well as to control for factors outside the treatment that also influence the dependent variable. The variables controlled in this study are: (1) student ability, (2) lecturer ability, (3) scope of lecture material, (4) lecture set, (5) lecture media, (6) time allocation, (7) time of lecture, and (8) test instruments used. While the dependent variable to be studied is learning outcomes.

This research was conducted on 80 students of Elementary School Teacher Education Study Program, Teaching and Education Faculty, Universitas PGRI Ronggolawe Tuban. Determination of students in each class (study group) is done randomly, so that the state of interclass ability is assumed to be balanced because it is not formed based on the initial ability level. Classes that are used as research subjects are randomly selected. The instrument used to measure the level of creativity before being used to collect data was trialled to obtain a valid and reliable test instrument

[27]. The instrument of creativity is given before and after treatment. Data before treatment is intended to measure the balance of students' initial creativity level before receiving treatment. While the data after the treatment obtained is used as research analysis data.

Data analysis in this study includes descriptive analysis and inferential data analysis for the purposes of hypothesis testing. Descriptive analysis is carried out to provide a description or illustration of the data collected without any intention to generalize [28]. Inferential analysis is used in order to test the hypothesis put forward by researchers. Because of this study to test the differences of the two variables, the t test [29] was used. Before testing the hypothesis, the analysis requirements test is first carried out, namely the test for the normality of the data distribution of all groups, and the homogeneity test for intergroup variants. For the distribution normality test the Kolmogorov-Smirnov Test is used. As for the variant homogeneity test the Leven's Test was used. Statistical hypothesis testing is performed at a level of 5% or  $\alpha = 0.05$ . All statistical analyzes use the SPSS 19.0 for Windows program.

### 3. Rresearch Result

The hypothesis in this study is that there are differences in the level of creativity of students who are taught with collaborative learning strategies with conventional learning. T test results obtained t count of 2.216 and a significance value of 0.0421. Because the significance value is 0.0421 < 0.05, a decision is made to reject H<sub>0</sub>. That is, there are differences in the level of creativity of students who are taught with collaborative learning strategies with conventional learning. The results of the descriptive analysis showed that the group average learned collaboratively was 47.90, while the mean group studied conventionally was 45.29. So, it turns out that the group learned collaboratively has a higher level of creativity compared to the group learned conventionally.

Based on the results of these studies, it indicates that the formation of groups in collaborative learning based on abilities in general has a significant effect on student creativity.

### 4. Conclusion

Based on the results of the research analysis, it can be concluded that there are differences in the level of creativity of students who are taught with collaborative learning strategies with students who are taught conventionally. The level of creativity of students who are collaboratively taught is higher than students who are taught conventionally.

### 5. Recomendation

The level of creativity in students must always be built so that they can become productive citizens later. To build this creativity requires a massive business. The most strategic way to build student creativity is through the learning process. For this reason, collaborative learning can be one of the choices in building massive and effective student

creativity.

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