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Enhancing engagement of student majoring in early childhood education in group work through brainstorming

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Abstract: *This study aims to investigate the effectiveness of incorporating brainstorming techniques to promote active students in group work. In today's educational landscape, fostering collaborative skills is crucial, and group work is a common pedagogical approach. However, ensuring that all students actively participate and contribute remains a challenge. The result of the research on 50 students majoring in early childhood education shows that it employs brainstorming as an intervention strategy to enhance student engagement in all quality and quantity with indicating a 58.1% improvement of quantity and 0.9 points of quality.*

Keywords: *Group work, Brainstorming, Student majoring in early childhood education, An Giang university*

1. Introduction

Group work is a cornerstone of modern education, offering students a platform to develop essential life skills. As expressed by Helen Keller, "Alone, we can do so little; together, we can do so much." This collaborative approach nurtures teamwork, effective communication, and problem-solving abilities, equipping students for the challenges of the real world (Keller, n.d.). By interacting within diverse teams, students gain exposure to a wide range of perspectives, enriching their understanding of complex issues and fostering creativity. The experience also underscores the importance of accountability and time management, crucial skills applicable in any professional setting. Group work, therefore, serves as a valuable learning tool, arming students with practical skills and insights needed to excel academically and thrive in their future careers. However, it is often observed that not all students actively engage in group discussions, leading to unequal contributions and suboptimal learning outcomes (Slavin, 1996). To address this issue, this action research study explored the effectiveness of integrating brainstorming techniques within group work to encourage active participation among students.

2. Content

2.1. Research methodology

- About the situation: Most of my students majoring in early childhood education were not excited when assigned assignments to explore knowledge related to the course, especially in group activities. Only some students actually work, others are less active or contribute almost nothing to their group, making group discussion results unsatisfactory. So, the question is "How to get my students to participate more actively and effectively in group exercises". To find the answer, research was conducted in the course of health care for preschool children.

- Research subjects: The study involved 50 sophomores studying in preschool children education at An Giang university. The participants were divided into 5 groups of 10 students each. Besides, 3 lecturers teaching these students also participate in the study as surveyed subjects.

- Research process: The research was conducted over a period of four weeks. During the first week, students were given traditional group work assignments without any help or support from the teacher, and their participation levels and attitudes were observed. In the following three weeks, brainstorming sessions were integrated into group work assignments with guidance from the instructor. Each student had to think and express their ideas when it was their turn to speak, and while collecting opinions, no one was allowed to evaluate or comment, which helped to mobilize many successive opinions (University of New South Wales, n.d.). The teacher recorded the first, and second result taken in the fourth week to compare and evaluate the effectiveness of the intervention. At the same time, interviews with

participating students in the first week revealed reasons why students were not active in groups. In the final week, students were interviewed again to collect information on self-assessment of progress.

With brainstorming, groups had to follow these steps:

- The first is to define the problem or objective. Clearly outline the problem the group was trying to solve or the objective they wanted to achieve.

- The second step is selecting a facilitator. A facilitator or moderator was designated to guide the discussion on track.

- The third is to generate ideas. Participants were encouraged to freely express their ideas and suggestions related to the problem or objective.

- The fourth step is to encourage divergent thinking. The members built on each other's ideas.

- The fifth is record ideas. Ideas were typically recorded on a whiteboard, paper, or in a digital document visible to the group.

- The following step is to clarify and combine related ideas to refine and develop them further.

- The final is to select ideas and create an action plan. The group can collectively evaluate, prioritize, and select the most promising solutions or approaches. After selecting the best ideas, the group can create an action plan, outlining specific steps to implement the chosen solutions.

Besides, 3 lecturers who were teaching preschool education students were interviewed 2 times. The first time is in the first week to find out the reasons that affect the quality of their group activities. The second interview is in the fourth week to evaluate students' changes in group activities.

2.2. Data collection

Data was collected through the following methods:

For students:

- The quantity and quality of spoken contributions made by each student during group work sessions was recorded. The quality of contributions is rated on a 5-point scale with 1 being very poor and 5 being very good. This data was collected during both the traditional group work phase and the brainstorming intervention phase.

- After the intervention, participants were asked to provide feedback through open-ended questionnaires. Quotes from these responses were used to support the findings.

For lecturers:

- Participants were interviewed with a few questions about the following 2 main contents: the level of student activity in group discussion exercises, the reasons why students are not interested in group activities. These answers were used to explore what influences students in groups.

- These lecturers were also asked to observe my class when students worked in groups through brainstorming.

2.3. Results

2.3.1. Exploring situation

The results of the lecturer interviews showed that only about 5-6 students were active in group activities, and there were not many unique ideas in the group discussion results. The reason for this is that uneven division of work is the main effect. They said "Students fear that group members will not contribute equally, leading to an unfair distribution of workload and possible frustration". The instructors also said "Not all students shared the same level of commitment to the work. Some group members appeared less dedicated, therefore, some students are frustrated and have no motivation to work hard". Lecturers also believed that many students felt self-conscious because their personal opinions were often refuted or because they learned poorly compared to other students in the group. They were afraid to express their opinions in public and only spoke when asked.

Following the student, main causes which made them less active in the group were fearing rejection or criticism and dominant group members. Students said "I worried that my contributions would be criticized or rejected by group members, but I reluctantly joined because of fearing negative feedback. Some other students said "The group leader and smart friends usually controlled discussions, leaving quieter students like them feeling overshadowed and unable to contribute effectively. Sometimes, they do not feel heard or valued, so they will be less likely to contribute".

2.3.2. Statistical findings

Table 2.1. Comparison of student participation in group work

Phase	Average number of contributions	Average quality level of contributions
Traditional phase	6.2	3.6
Brainstorming phase	9.8	4.5

The statistical analysis revealed a significant increase in student participation during the brainstorming intervention phase, as shown in Table 1. The average number of contributions per student increased from 6.2 in the traditional phase to 9.8 during the brainstorming phase, indicating a 58.1% improvement. Furthermore, the quality of comments also increased significantly (up 0.9 points).

2.3.3. Qualitative feedback

Participant students were asked to provide feedback on their experiences with brainstorming in group work. The following quotes reflect their responses:

"Brainstorming made it easier to share ideas without feeling judged."

"I felt more involved and motivated to contribute when we used brainstorming."

"It was great to see everyone's ideas on the board; it helped us build on each other's thoughts."

These quotes highlighted the positive impact of brainstorming on student engagement and collaborative dynamics within the groups.

The lecturers responded that "students thought outside the box, actively shared ideas, and cooperated better". They also said that students were more courageous in contributing ideas, knew how to build on the ideas of others, and enhanced their teamwork and communication skills. Some students overcome mental blocks themself because the nonjudgmental environment allowed for the free flow of ideas, even if some initially seemed impractical.

2.3.4. Discussion

The results of this action research study provide evidence that incorporating brainstorming techniques into group work can significantly enhance student engagement. The statistical data showed a substantial increase not only in quantity but also in quality of contributions made by students during the brainstorming phase compared to the traditional phase. This suggests that brainstorming serves as an effective strategy to encourage active participation.

The qualitative feedback from participants further supports the statistical findings. Both students and lecturers expressed that brainstorming created a more inclusive and open environment for sharing ideas, which led to increased motivation to participate actively. This aligns with the work of Doğan & Batdi in 2021 having also shown that students' creativity and originality increase significantly when brainstorming is applied.

Besides enhancing the overall idea generation when members were actively engaged in discussion, it promoted individuals' ability to generate quality and novel ideas in order to solve complex problems, as Al-Samarraie & Hurmuzan concluded in their study about brainstorming techniques in higher education in 2018.

3. Conclusion

This action research study demonstrates that integrating brainstorming techniques into group work assignments can significantly enhance student engagement. The statistical evidence and qualitative feedback highlight the positive impact of brainstorming on participation and effect levels and the overall learning experience for students. Thus, brainstorming in group work can be an effective way to tap into the collective intelligence and creativity of the team, leading to innovative solutions and better decision-making. Morovers, it encourages open communication and the exploration of diverse perspectives, which can result in more comprehensive and effective results. Educators are encouraged to consider incorporating brainstorming as an effective pedagogical strategy to promote active engagement in group work, ultimately leading to improved collaborative skills and better learning outcomes.

References

1. Al-Samarraie, H. & Hurmuzan, S. (2018). *A review of brainstorming techniques in higher education.* Thinking Skills and Creativity, 27, 78-91. Retrieved from https://doi.org/10.1016/j.tsc.2017.12.002.

2. Doğan, Y. & Batdi, V. (2021). *Revisiting brainstorming within an educational context: A meta-thematic analysis.* Journal of Learning for Development, 8(3), 541-556.

3. Keller, H. (n.d.). *Goodreads Quotes*. Retrieved from https://www.goodreads.com/quotes/594-alone-we-can-do-so-little-together-we-can-do.

4. Slavin, R. E. (1996). *Research on Cooperative Learning and Achievement: What We Know, What We Need to Know.* Contemporary Educational Psychology, 21 (1), 43-69.

5. University of New South Wales. (n.d.). *Brainstorming*. Retrieved from https://www.teaching.unsw.edu.au/brainstorming.