**Promoting Students Engagement and Interaction in Class Discussions Through Group Work**

**Abstract**

This research aims to promote students’ engagement, active participation and interaction in class discussions in Business Information Systems (BIS) course through the implementation of a group work strategy. This study is conducted as a classroom action research on a BIS course consists of 33 students during the 2022/2023 academic year. The data collection involved observation and questionnaire techniques and assessments across two cycles.

The observations revealed that the group work strategy effectively improves students’ engagement and interaction levels. Notably, when students were given the opportunity to form their own groups, there was a significant increase in interaction and discussions between peers compared to groups formed by the teacher. This highlights the importance of student autonomy in group formation, as it fosters a sense of collaboration among students.

When the teacher randomly assigned groups, there was a noticeable increase in the number of students answering questions in class, rising from 15% to 42%. Additionally, students-student interaction significantly increased from 7% to 71%, while student-teacher interaction remained unaffected compared to the pre-cycle. However, when students were given the freedom to choose their group members based on their preferences, the level of students-student interaction was a substantial increase, soaring from 7% to an impressive 88%. It was also observed that student-teacher interaction and the level of students answering questions decreased when groups were formed based on student selection. This suggests a potential trade-off between increased peer interaction and reduced teacher-student interaction, which should be carefully considered when implementing group work strategies.

Findings indicated that students perceive group activities as valuable opportunities for enhanced learning, improved understanding, improved communication skills, and increased enjoyment in the classroom. Educators should strive to strike a balance between peer interaction and student-teacher interaction, ensuring that students receive appropriate guidance and support throughout the group work process. Providing clear guidelines, assigning roles, and actively monitoring group dynamics can help create an inclusive and productive collaborative learning environment.

Keywords: Students’ participation, Students’ engagement, Students’ interaction, Collaborative learning, Group work.

**INTRODUCTION**

Although learning and understanding require high quality interactions, many students are unable to interact with both their teacher and fellow students and participate in-class discussions. Many students experiencing a reluctance to actively engage with the teacher and their peers, resulting in limited participation in the class discussions and a lack of response to questions posed by the teacher. Student interaction refers to "the exchange of ideas, information, and perspectives between students in an educational setting, involving verbal and non-verbal communication, collaboration, and social engagement" (Kumpulainen and Mutanen, 2011, p. 67). According to the definition of student engagement provided by Fredricks, Blumenfeld, and Paris (2004), the absence of students’ active engagement and interaction with peers during class discussion, suggests low attention, motivation and involvement that student demonstrate in the learning process.

Literature review has shown that student engagement plays a crucial role in the effectiveness of teaching and learning, and there is a need to find ways to promote student engagement and participation effectively. Biggs and Tang (2011) believe that in order to achieve the desired learning outcomes of any course, students are expected to analyze and discuss assigned topics, express their opinions and ideas, and raise appropriate questions, do brainstorming and engage in collaborative thinking. Studies also suggest that increased student engagement positively correlates with academic achievement, as it allows for deeper interaction with course content, peers and the teacher (Kunka, 2020). When students actively engage, question, share ideas and interact with peers during class discussions, they can gain different perspectives, challenge their own beliefs and assumptions, and enhance their critical thinking skills and understanding of the topics being discussed (Vygotsky, 1978). Therefore, it is imperative to motivate and encourage students to actively participate in class discussions in order to support their learning.

Previous studies have shown that group work strategies effectively address the issue of low student’s participation and peer interactions within the classroom. Group work strategy refers to "an instructional approach that involves organizing students into small groups to work collaboratively on tasks, projects, or discussions, promoting peer interaction, shared learning experiences, and the development of teamwork skills" (Johnson, Johnson, & Smith, 2006, p.5). Group work strategies can foster students' engagement and interaction in class by creating a collaborative learning environment (Johnson and Johnson, 1989), where students can learn from each other's knowledge and experiences, ask and answer questions, and provide support, fostering peer learning and support (Kirschner, Sweller, and Clark, 2006). Additionally, working in groups allows students to enhance their social interaction and communication skills, as they engage in effective communication, active listening, and collaboration with their peers (Johnson and Johnson, 2009). Thus, group work strategies offer opportunities for students to engage, interact, and learn collaboratively in the classroom, contributing to their overall educational experience.

In this research, the group work strategy was adopted as a solution to promote students’ interaction, active participation and engagement in class discussions, ultimately improving their learning and academic achievement in assessments. Therefore, the research seeks to assess the effectiveness of group work strategy in promoting students’ interaction and engagement in class discussions and their academic achievement in assessments. In order to achieve this, the following questions have been addressed:

1. How does the implementation of group work activities impact students’ in-class participation in the Business Information System course?
2. To what extent does group work activities contribute to students’ achievement in assessments within the Business Information System course?

To further explore the impact of group work strategy on students’ interaction and performance, several research questions were addressed in this research: what is the impact of group work activities on three aspects; students’ interaction with the instructor, answering questions raised in the class, and interaction with peers during class-discussions? how do group work activities influence students’ learning attitudes? How do different group formation methods (teacher-assigned and student-selected approaches) impact group dynamics? what are students’ perspectives on group work activities and group formation?

By investigating the effects of group work activities on student engagement and interaction, as well as their performance in assessments, this research contributes to our understanding of effective teaching and learning practices. The findings of this research will shed light on advantages of incorporating group work activities in the classroom, highlighting their potential to enhance student engagement and learning. Moreover, exploring the impact of different group formation methods and gathering students' perspectives on these approaches will provide valuable insights for educators to design and implement tailored group work strategies that best suit students’ needs and preferences.

**REVIEW OF LITERATURE**

Participation in class discussions is a crucial aspect in student engagement, which is highly valued in higher education, with universities trying to use student engagement as a part of higher education assessment (Rocca, 2010). However, some students struggle to actively participate in class, posing a challenge for instructors to encourage question asking and engagement in discussions. Literature has identified various factors that can influence students’ willingness to participate in class, categorized by Rocca (2010) into five groups: logistics (class size, seating arrangement, timing of class, course policies on participation as set by the instructor, type of course, a professor’s use of media in the classroom), confidence and classroom apprehension (personal fears of inadequacy in front of others), personal traits (communication apprehension, self-esteem, students’ assertiveness and/or responsiveness), the impact of instructor and classroom climate, and gender differences.

Active students’ interaction and participation in class are crucial for effective learning, as they actively engage students in the educational process and invigorate the classroom environment (Cohen, 1991). Biggs (2003) argues that the effective learning depends on the level of student-student interaction and student-teacher interaction within a conducive learning environment. Courses built around only lecturing are inefficient and uninteresting for both instructors and students, emphasizing the need for minimizing lecturing and providing opportunities for group work and informal interaction between instructors and students (Biggs and Tang, 2011).

Creating a supportive environment is essential for promoting student engagement and participation in class (Race,2014). Collaborative learning has demonstrated its value in fostering a supportive learning environment. Johnson and Johnson (1999, p.68) described collaborative learning as students working together to achieve shared goals, seeking outcomes that are beneficial to all, engaging in discussions, assisting one another’s understanding, and motivating each other to work hard. Collaborative learning is moving the student from teacher dependence to peer interaction, as each student is responsible for contributing to discussion and maintaining respect for other group members (Melick and Melick, 2010). Collaborative learning can foster a sense of relatedness and positive social interactions among students (Ryan and Deci, 2000), and can have positive effect on student achievement by providing opportunities for students to benefits from insights of their peers (Hattie, 2012). Collaborative learning promotes active engagement, higher-order thinking skills, and deeper understanding through knowledge construction, idea negotiation, and developing collaboration and communication skills (Barkley, 2010) and (King, 1993).

Studies examining the impact of group work strategies on participation and academic achievement have shown that group activities improve students’ participation, learning attitudes, communication skills, motivation, enjoyment, and excitement in the learning process (Kim et al., 2020); Kumaraswamy (2019); Frykedal and Chiriac (2018); Mesquita and Lopes (2018); Daba et al., (2017); and Taqi and Al-Nouh (2014). Group division can facilitate interaction and discussion in class (Cohen, 1991). Small-group learning can increase opportunities for learners to ask questions, engage in in-depth discussions, articulate their understanding orally, and learn from feedback within their group (Race, 2014).

The formation of groups is a crucial step in designing an effective collaborative learning environment, as appropriate group composition enhances group dynamics and learning outcomes (Krouska, Troussas, and Virvou, 2019). The literature review indicates two main methods for dividing large classes into groups: "teacher-assigned" and "student-selected" (Hassaskhah and Mozaffari, 2015). In the “teacher-assigned” method, teachers can manually assign students to groups either randomly or based on specific criteria such as interests, university status, major, or discipline (Schultz-Bergin and Avram, 2022), or groups can also be formed automatically by a system using an algorithm (Krouska, Troussas, and Virvou, 2019). The “student-selected” method involves students choosing their group mates based on their preferences.

Each group formation approach has its own advantages and disadvantages, which can influence group dynamics and outcomes (Krouska, Troussas, and Virvou, 2019). The "teacher-assigned" method of group formation offers advantages such as balanced group composition, addressing skill gaps, and minimizing bias (Schultz-Bergin and Avram, 2022). Teachers can create diverse groups based on students' academic abilities and backgrounds, fostering collaborative learning. However, this approach may limit student autonomy, potentially affecting motivation and engagement (Hassaskhah and Mozaffari, 2015). Mismatched interests and perceived inequity in the assignment process can also impact group dynamics (Krouska, Troussas, and Virvou, 2019). On the other hand, the "student-selected" method allows for enhanced motivation, engagement, and compatibility among group members (Hassaskhah and Mozaffari, 2015). Students have the opportunity to work with peers who share their interests and preferences, promoting stronger collaboration. However, there is a risk of formation bias, where students may exclude certain individuals or form groups based on pre-existing friendships (Krouska, Troussas, and Virvou, 2019). Skill imbalance and potential conflicts within student-selected groups are also factors to consider (Hassaskhah and Mozaffari, 2015). These advantages and disadvantages demonstrate the importance of carefully considering the goals and context of the learning environment when choosing the most appropriate group formation method.

**METHOD**

This research was conducted on a group of 33-students enrolled in the Computers and Business Information Systems course. out of the participating students aged 18- 23 there were 28 females and 5 males, and they were in their second, third and fourth year in the university, very few where in the fifth year. The students were Bahraini and two non-Bahraini. Approximately 74% of students’ GPAs range from 2.00 to 2.99, and only 6% have GPAs above 3.00.

This research was conducted in two cycles, and each cycle consisted of a plan, observation, and reflection. Prior to commencing Cycle 1, students’ data were collected using an observational checklist for monitoring students’ participation and interaction with the instructor during lecturing, and summative assessment scores.

In Cycle 1, the teacher assigned students to groups of 5-6 randomly, and the same groups were asked to do a different group activityover four lectures. In order to facilitate effective discussions and promote student engagement and interaction during the group work activities, students were asked to seat in semi-circles arrangement facing group members for discussion, and then the assigned tasks were explained to the groups, and instructions were provided regrading what is expected of them. For the group work activities, structured observation was employed as an effective method for describe and quantify student behavior (Briesch, Volpe and Floyd, 2018).

The data collection tools used in Cycle 1 include an observational checklist for monitoring students’ participation and interaction during activities and lecture, summative assessment scores, and a semi-structured questionnaire to gather students’ perception of the group activities, adopted from Taqi and Al-Nouh (2014) and Kumaraswamy (2019).The reflection on Cycle 1 suggests that the group work was effective in promoting students’ participation and communication within the classroom. Students expressed positive attitudes and engagement during the group activities. However, there were still students who remained passive or silent within their groups, indicating the need for further encouragement of interaction among students. Some students also expressed a desire to choose their group members instead of being randomly assigned. The results also indicated that the group work had no significant impact on students' grades compared to the pre-cycle period. It was suggested that linking assessments to the group activities could provide a better understanding of the effect of group work on academic achievement.

In Cycle 2, adjustments were made based on the findings and reflection from Cycle 1. The "student-selected" approach was adopted to allow students to choose their group members, considering their increased familiarity with each other through previous group activities. Additionally, the assessment was modified to include a question related to a group activity, aiming to assess the impact of group work on academic achievement. Similar data collection tools were used in Cycle 2, including the observational checklist, summative assessment scores, and the semi-structured questionnaire. The questionnaire was used to gather students’ perception of the group activities following the change in group formation method. The questionnaire was adopted from Taqi and Al-Nouh (2014) and Kumaraswamy (2019). It consisted of Likert four-scale questions designed to assess their perception of their learning experience through group activity and group formation method. Additionally, open-end questions were included to gather students’ comments on the group activities and their suggestions.

**FINDINGS AND DISCUSSIONS**

**Students’ participation and engagement in class discussion** (Data source: Observational checklist)

To assess the effectiveness of the group work strategy in promoting in-class student participation, observational checklists were used. Frequencies and average percentages were calculated based on the number of students who participated compared to the total number of students present. Table 1 presents the results of the observations, revealing that when students were allowed to select their own group members, interaction and discussions between peers increased to 88%, which is significantly higher than the interaction observed in groups formed by the instructor (71%).

Furthermore, it was observed that the number of students answering questions in class showed a greater increase during Cycle 1 (42%) compared to Cycle 2. These findings support the overall effectiveness of the group work strategy in enhancing student participation and engagement in class discussions.

Table 1

Summary of Students' Participation Level in Class

|  |  |  |  |
| --- | --- | --- | --- |
|  | Precycle | Cycle 1  “Teacher assigned” | Cycle 2  “Student-selected” |
| Students answering questions | 15% | 42% | 25% |
| Students interacting with peers. | 7% | 71% | 88% |
| Students interacting with teacher | 30% | 31% | 18% |

While students forming their own groups led to increased interaction among peers, there was a decrease in both student-teacher interaction, from 30% to 18%, and the percentage of students answering questions, from 42% to 25%, when groups were formed based on student selection. These findings suggest that adopting the "student-selected" approach resulted in students being more inclined to answer questions during group activities rather than responding to general questions posed by the teacher during lectures. Additionally, students tended to interact more with each other than with the teacher. It was observed that students were more likely to engage in off-task discussions and casual chatting if they were friends, rather than focusing on the teacher's questions during the activities. This observation aligns with the findings of Yamane (2006).

**Students’ Academic achievement in assessments** (Data source: Assessment grades)

To assess the impact of the group work strategy on students' academic achievement in assessments, the assessment scores of students from all cycles were analyzed using cross-case analysis (means). The results, presented in Table 2, indicated no significant change in the average assessment scores of students from the pre-cycle to Cycle 2. This finding contrasts with the findings of Kim et al. (2020) and Kumaraswamy (2019), where group work was found to enhance students' academic achievements in assessments.

Table 2

Cross-case analysis of the average assessment scores of students

|  |  |  |  |
| --- | --- | --- | --- |
|  | Precycle Assessment | Cycle 1 Assessment | Cycle 2 Assessment |
| Mean | 5.7439 | 6.9848 | 4.2083 |
| N | 33 | 33 | 30 |
| Std. Deviation | 2.50055 | 2.01260 | 2.05850 |

**Students’ attitude towards group activities** (Data source: Questionnaires)

*Cycle 1 questionnaire*

Descriptive analysis was conducted to evaluate students' perceptions of group activities in the Cycle 1 questionnaire, focusing on four dimensions: perception and attitudes toward work activities, motivation, self-confidence, and interest. The results, presented in Table 3, indicate that students hold positive attitudes toward participating in classroom group activities for the course. They expressed a sense of ease and capability in engaging with the group activities and acknowledged that these activities motivated their involvement in the learning process. Students reported high levels of satisfaction with their collaborative efforts within the groups and felt confident in expressing their opinions during group discussions. Furthermore, students expressed enjoyment in participating in the group activities and expressed an interest in continuing such activities throughout the semester.

Table 3

Descriptive analysis of questionnaire Cycle 1

|  | Mean | Std. Deviation | N |  |
| --- | --- | --- | --- | --- |
| **Perception and attitudes toward work activities** |  |  |  |  |
| I could participate well in group discussion and work activity. | 3.39 | 0.79 | 28 | Strongly agree |
| I found difficulties in engaging myself in a group work activity and discussion. | 1.71 | 0.71 | 28 | Disagree |
| I feel satisfied from my group collaboration. | 3.00 | 0.87 | 25 | Strongly Agree |
| **Level of motivation** |  |  |  |  |
| I have followed all activities in group discussion and assignment. | 3.29 | 0.71 | 28 | Strongly agree |
| I was too lazy to get engaged in a group work activity and discussion. | 1.29 | 0.46 | 28 | Disagree |
| Using group work activity and discussion could not motivate me to engage myself in learning activity | 1.89 | 0.74 | 28 | Disagree |
| **Self-Confidence** |  |  |  |  |
| I was confident enough to deliver my opinions in a group discussion and work activity. | 3.14 | 0.85 | 28 | Strongly agree |
| I was too shy to get engaged in a group work activity and discussion. | 1.71 | 0.71 | 28 | Disagree |
| **Level of interest** |  |  |  |  |
| I felt bored to get engaged in a group work activity and discussion | 1.93 | 1.05 | 28 | Disagree |
| I would like the instructor to continue giving group work activities in the BIS202 course. | 2.68 | 0.98 | 28 | Agree |

Figure 1 illustrates the findings derived from coding and analyzing the responses of 28 students (27 positive and 1 negative) to open-ended questions regarding the usefulness of group activities. Four major themes emerged from the analysis. Approximately 63% of the responses highlighted that group activities facilitate increased learning, better comprehension of the topics, and improved attention in class. Around 22% of the responses emphasized that group activities enhance communication and foster familiarity among students. Furthermore, 19% of the responses indicated that group activities promote collaboration and teamwork. Additionally, 15% of the responses highlighted that group activities provide opportunities for students to express their opinions and develop self-confidence. It is worth noting that one student expressed a dislike for group activities without providing a specific reason for their refusal.

Figure 1

Group activities usefulness from students’ perspectives

*Cycle 2 questionnaire*

Descriptive analysis was employed to evaluate students' perceptions of the group formation method and group work strategy in the Cycle 2 questionnaire, as presented in Table 4. The analysis revealed that students place significant importance on the negotiation process between the student and instructor when forming groups. The majority of students expressed a strong preference for selecting their own group members.

Table 4

Descriptive analysis of questionnaire Cycle 2

|  | Mean | Std. Deviation | N |  |
| --- | --- | --- | --- | --- |
| **Group formation** |  |  |  |  |
| I accepted the group synthesis proposed by the instructor. | 3.20 | 0.71 | 25 | Strongly Agree |
| I would like to work with groups proposed by the instructor in the future | 2.56 | 0.96 | 25 | Agree |
| I prefer to choose the group that I want to do the activities with. | 3.16 | 0.80 | 25 | Strongly Agree |
| I feel group synthesis negotiation between the student and instructor is important. | 2.96 | 0.89 | 25 | Agree |
| **Group work strategy for learning** |  |  |  |  |
| I think that group work is a good idea. I enjoy taking part in group work. | 3.24 | 0.66 | 25 | Strongly Agree |
| I learn better from group interaction than lecture. | 2.68 | 0.99 | 25 | Agree |
| I think that I will learn more about the subject matter working in a group than if I worked alone (or on my own). | 2.88 | 0.88 | 25 | Agree |
| The instructor designs group activities as appropriate, useful and interesting. | 2.84 | 0.69 | 25 | Agree |

The results of the questionnaire indicated that students perceive the group work strategy as superior to traditional lectures and self-study methods. According to their feedback, group work allows for enjoyment, increased learning, and better understanding through engaging in group activities and interactions, as presented in Table 4. In response to the open-ended question in the Cycle 2 questionnaire, three students expressed concerns about the unequal or unclear distribution of work among group members. They suggested that the instructor assign specific roles to each student and rotate responsibilities, allowing each student to take turns leading discussions, taking notes, conducting web research, and so on.

To sum, the research findings indicate that group work is an effective strategy for addressing the challenge of low students’ participation and promoting engagement and interaction between students and teacher in the classroom. However, no statistically significant correlation was observed between improved students’ engagement and their academic achievement in assessments within the scope of this research. This finding align with the findings of (Lou, Abrami, and d'Apollonia (2001); Slavin (1996)) who found that the impact of cooperative learning and student engagement on academic achievement may vary depending on factors such as group formation, task design, individual student characteristics.

Furthermore, the observational analysis revealed that when students were given the opportunity to form their own groups, there was a significant increase in interaction and discussions between peers compared to groups formed by the instructor. This highlights the importance of student autonomy in group formation, as it fosters a sense of ownership and collaboration among students. However, it was also observed that student-teacher interaction and the percentage of students answering questions decreased when groups were formed based on student selection. This suggests a potential trade-off between increased peer interaction and reduced teacher-student interaction, which should be carefully considered when implementing group work strategies.

Additionally, the analysis of students' perceptions towards group activities revealed highly positive attitudes. Students expressed that group activities facilitated better learning, improved understanding of the topics, increased attention, and heightened interest in the learning process, leading to greater knowledge acquisition. They also highlighted the benefits of promoted self-confidence, enhanced communication and acquaintance among students, as well as the promotion of collaboration and teamwork. These findings align with previous research that emphasizes the positive impact of group work on student engagement and learning outcomes.

However, some students expressed concerns about unequal distribution of work within groups. They suggested that assigning specific roles and rotating responsibilities among group members could address this issue. Incorporating clear guidelines and strategies for equitable workload distribution within groups can help alleviate these concerns and ensure a fair and productive collaborative learning environment. Also, it is important to note that one student expressed a negative perception towards group activities without providing a specific reason. This highlights the need for further exploration of potential challenges that some students may face when engaging in collaborative learning environments. Understanding and addressing individual differences and concerns can contribute to the development of more inclusive and effective group work strategies.

Furthermore, the analysis of students’ perceptions revealed that students value the negotiation process in group formation and prefer to have the autonomy to choose their own group members. This finding emphasizes the importance of considering students' preferences and involving them in decision-making processes when implementing group work strategies. By allowing students to have a say in their group composition, educators can enhance their sense of responsibility and engagement in the learning process. It is important to explore various criteria for group formation and assess their effects on students’ interaction and participation. This will help identify the most appropriate basis for forming groups that aligns with student learning objectives and promotes effective engagement and collaboration.

In conclusion, the findings from this study demonstrate the positive impact of group work strategies on student engagement, interaction, and learning outcomes. Students perceive group activities as valuable opportunities for enhanced learning, improved understanding, and increased enjoyment in the classroom. The autonomy to choose group members and engage in collaborative decision-making processes is highly valued by students. While the benefits of group work are evident, it is essential to consider the potential challenges associated with reduced teacher-student interaction and unequal distribution of work within groups. Educators should strive to strike a balance between peer interaction and teacher involvement, ensuring that students receive appropriate guidance and support throughout the group work process. Providing clear guidelines, assigning roles, and actively monitoring group dynamics can help create an inclusive and productive collaborative learning environment.

**CONCLUSION**

This research aimed to assess the effectiveness of implementing a group work strategy to promote students' interaction and engagement in class discussions in a business information systems course, and to examine the impact of group work activities on students’ achievement in assessments. The findings of the research indicate that the implementation of group work activities had a positive impact on students' interaction and engagement in in-class discussions. However, this improved student engagement does not have a significant impact on their academic achievement in assessments.

Furthermore, the study revealed that students' learning attitudes were positively influenced through group work strategy, as they found it facilitated better learning, improved understanding of topics, and increased interest in the learning process. Additionally, students found that group work activities increased enjoyment in the classroom, and improved teamwork and communication among their peers. However, concerns were raised about unequal distribution of work within groups, suggesting the need for clear guidelines and role assignment strategies to address this issue and create an inclusive and productive collaborative learning environment.

When students were given the opportunity to form their own groups, there was a significant increase in interaction with peers and discussions compared to groups formed by the teacher, highlighting the importance of student autonomy in group formation. However, it was observed that there was a trade-off between increased peer interaction and reduced teacher-student interaction when students selected their group members.

Therefore, different criteria for group formation should be explored to identify the most appropriate method that aligns with student learning objectives and promotes effective engagement and collaboration. Future research could delve deeper into understanding individual differences in perceptions and preferences regarding group work strategies, as well as explore strategies to address potential challenges and maximize the benefits of collaborative learning. By continually refining and adapting group work approaches based on student feedback and needs, educators can create a supportive and engaging classroom environment that fosters holistic student development and academic success.

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