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Achievements-Concerns-Solutions (ACS): A Closure Activity to Improve Group Collaborations in English Classes

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ABSTRACT

This study examined the implementation of the Achievements-Concerns-Solutions (ACS) intervention in enhancing student collaboration skills among Grade 10 students in a private high school in the Philippines. The ACS intervention is a structured reflective activity conducted at the end of each collaborative session. It encourages student groups to identify their achievements, raise concerns, and propose solutions, thereby fostering accountability, communication, and problem-solving. The study utilized a mixed-method action research design and employed total population sampling, which involved 257 students who submitted both assent and parental consent forms; data was gathered during the second and third quarters of the school year. Pre- and post-surveys utilizing the Collaboration Self-Assessment Tool (CSAT) created by Ofstedal and Dahlberg (2009) assessed collaboration levels within intrapersonal and interpersonal domains, while interviews yielded qualitative insights. Data were analyzed using both descriptive and inferential statistics, including means and the Wilcoxon Signed Rank test. Results showed an improvement in collaboration levels from the "Developing" stage to the "Established" stage following the ACS intervention. Statistical analysis confirmed the significance of these gains. Interview responses further supported these findings, highlighting students' increased awareness of their roles, improved group dynamics, and proactive engagement in resolving challenges. Overall, the ACS intervention proved effective in promoting collaborative behavior and reflective practices among junior high school students participating in English research activities; researchers also suggest using it as an accountability closure activity in English classes and other contexts.

Introduction

Collaboration is an essential 21st-century skill, as the real world reflects that people do not learn, work, and live in silos and are called to work collectively to achieve greater goals that contribute to the common good (Riaz & Din 2023). This is a particularly important skill to develop among students, as learners who collaborate and communicate well with others function effectively in groups, develop leadership qualities, make sound decisions, handle conflicts, stand up to negative peer pressure, and maintain a positive outlook on themselves and their environment (Cleaves, 2015).

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However, the COVID-19 pandemic has disrupted how students collaborate in classrooms, particularly in basic education classrooms where adolescent students are supposed to develop said skills (Kitanovska-Kimovska et al. 2023; Zarzycka et al. 2021). Although there were collaborative tasks given during online classes, there were many obstacles to effective group collaborations; for instance, students found it harder to express and interpret emotions and subtleties in an online setting, and there were many delays caused by weaker internet connections (Kalmar et al. 2022).

This phenomenon was evident when students from a private school in Cagayan de Oro, Philippines, resumed face-to-face learning. Several students were either socially inept and shy or fiercely independent to the extent of preferring individual tasks over group collaborations. Since returning to face-to-face classes in the school year 2022-2023, students have reported being 'uncomfortable' in tasks that involved working in groups. These difficulties manifest themselves through unfinished work, group fissions, and increased feelings of pressure as reported by students to their teachers and advisers.

While there has been extensive focus on collaboration in both academic and professional settings, there seems to be a gap in literature focusing on group collaboration among secondary students, particularly in the exploration of the effectiveness of reflective closure activities like the ACS (Achievements-Concerns-Solutions) or CSAT approach towards enhancing collaboration among students.

This paper draws on Vygotsky's Theory of Social Constructivism (1962), which claims that social interaction serves as the foundation of learning. However, many frameworks focus on the difficulties of social collaboration but almost always overlook self-regulation. Effective collaboration involves both types of skills, which are intrapersonal personal skills (self-awareness and responsibility) in addition to interpersonal skills (hands-on practice like communication and joint problem-solving). Zimmerman et al. (2015) claim that self-regulation has been proven important when talking about managing a role in workgroups, while Gillies (2016) emphasizes that cooperative learning becomes effective when they provide support and responses to one another. Panadero and Alonso-Tapia (2013) have stated that peer collaboration and self-regulation stand at an interdependent level where both are needed for the success of group output.

These dual requirements form the basis for ACS's design. Initially, each group selects a representative to report on the day. The report follows a three-part structure: The report is structured into three parts: Achievements, which highlights completed tasks; Concerns, which addresses challenges faced; and Solutions, which proposes actionable responses. This sharing process, done while peers listen, encourages transparency, reflection, and peer learning. ACS serves as a concluding activity that briefly reviews the lesson to help students recall what they have learned—or should have learned—and provides teachers with insight into their students' understanding, allowing them to plan future lessons more effectively (Lewis et al. 2019). By engaging in ACS regularly, students are expected to build self-awareness, develop accountability, and better navigate interpersonal dynamics. The process is intended not only to enhance group productivity but also to foster a supportive classroom environment.

The objective of this study is to assess students' self-reported levels of collaboration before and after the ACS intervention and to determine whether there are statistically significant improvements in collaboration skills following the intervention.

Literature Review

Student collaboration has become increasingly important in contemporary education, particularly as higher education and K–12 systems emphasize active learning, project-based instruction, and digital teamwork. Recent research highlights that effective collaboration is not a single construct but a constellation of interconnected dimensions, including contribution, motivation, work quality, time management, support, preparedness, problem solving, dynamics, interaction, flexibility, and reflection. Understanding these components demonstrates how students can work productively in both physical and virtual learning environments.

A foundational element of collaboration is contribution, or the extent to which students complete their share of tasks and add value to group efforts. Recent work shows that self-regulated learning strongly predicts collaborative contribution, particularly in online environments where accountability is less visible. Students who actively set goals, monitor their progress, and take responsibility for their learning are more likely to contribute meaningfully to group outcomes (Broadbent & Poon, 2015; Wang et al., 2009). This suggests that promoting self-regulatory skills is crucial for sustaining fair and equitable team contributions.

Closely linked are motivation and participation, which shape the level of engagement students demonstrate in group tasks. Rashid and Asghar (2016) found that motivation was enhanced when collaboration was tied to meaningful goals and active involvement, reinforcing the idea that student buy-in is necessary for consistent participation. Online studies further reveal that participation is mediated by students' ability to self-organize, underscoring the interplay between motivation and learning strategies in collaborative environments (Wang et al., 2009).

The quality of work produced by student groups depends on how well teams establish standards and monitor performance. Travers et al. (2014) reported that students who set structured growth goals and engaged in reflective activities demonstrated improvements not only in their learning outcomes but also in their ability to maintain high-quality performance. Quality outcomes also depend on problem-solving skills, particularly in collaborative settings where students must integrate diverse perspectives. Li et al. (2023) confirmed that collaborative problem solving involves coordinating strategies, managing shared knowledge, and negotiating solutions, skills that are predictive of success in complex, technology-mediated learning tasks.

Equally important is time management, which allows students to coordinate schedules and meet deadlines efficiently. Travers et al. (2014) emphasize that organized self-reflection and growth objectives improve time-management abilities, indicating that intentional strategies assist students in evading last-minute scrambles and ensuring steady advancement. Preparedness is a natural complement to time management; when students arrive with relevant knowledge and completed tasks, they strengthen the group's ability to stay focused and productive (Wang et al., 2009; Wilson et al., 2021).

Collaboration also thrives when students offer team support in an environment of psychological safety. In a recent study on online interdisciplinary teams, Robinson and Held (2024) found that psychological safety encouraged openness, knowledge sharing, and collaborative problem-solving. Similarly, Payne and Hanson (2023) showed that explicitly teaching skills for fostering psychological safety, such as inclusive communication and respectful feedback, significantly improved collaboration in student project teams.

The development of team dynamics and interactions with others is shaped by prior experiences and communication practices. Wang et al. (2009) demonstrated that online teamwork experience and self-regulated learning jointly determined students' ability to interact productively, emphasizing the importance of both individual and collective behaviors. Strong interactions also build trust and transactive memory systems, enabling students to draw on each other's strengths effectively.

Role flexibility is another crucial dimension, as groups often face shifting challenges that require adaptability. Issa (2016) argued that embedding self- and peer-evaluation within teamwork fosters role flexibility by encouraging accountability, openness to feedback, and willingness to adjust responsibilities as needed. This adaptability helps avoid points where progress could be delayed by limited resources or dependencies and allows groups to function more efficiently across different project stages.

Finally, reflection plays a vital role in sustaining collaboration over time. Mason and Singh (2016) demonstrated that structured peer reflection in physics recitations improved students' use of problem-solving strategies, such as diagramming, and led to better performance. Likewise, Hoffman et al. (2024) found that guided and unguided reflection prompted metacognitive thinking, with guided prompts producing more profound engagement. These findings highlight reflection as a mechanism not only for learning but also for improving group processes and outcomes.

Literature reveals that student collaboration is an interplay of cognitive, motivational, and socio-emotional components. Contribution and participation ensure equitable involvement, while quality, preparedness, and time management sustain productivity. Team support, dynamics, and role flexibility build resilience and adaptability, and reflection deepens learning by enabling students to critically examine their practices. This holistic view suggests that fostering collaboration in educational contexts requires intentional structures, such as goal-setting, peer feedback, reflective practices, and psychological safety, to ensure that students not only complete tasks but also develop the skills necessary for lifelong teamwork.

To fulfill the purpose of the study, the study sought to answer the following research questions:

Research Question 1. What are the students' self-assessed levels of group collaboration skills as measured by the Pre-survey and Post-survey before and after ACS intervention?

Research Question 2. What is the difference between the students' self-assessed levels of group collaboration skills before and after the ACS intervention?

Research Question 3. What are the students' experiences during the ACS intervention?

Method

Research Design

This study employed a mixed-methods action research design to tackle a specific issue in a designated educational context through structured interventions and reflective practices (Zohrabi, 2013). The main goal was to improve how well students work together by using the ACS intervention. Data was collected before and after the intervention to see how well it worked.

Participants

The study was conducted in a private educational institution located in Cagayan de Oro City, the Philippines. The study's participants were 15- to 17-year-old Grade 10 students. We specifically chose this level because Grade 10 students actively participate in English research activities, which necessitate a high degree of group collaboration. We carried out the intervention and data gathering during the second and third quarters of the school year, from October to February.

The sampling procedure used in the study was Total Population Sampling, which included all Grade 10 students who submitted both their assent and parental consent forms. Only those who voluntarily agreed to participate, along with their parents' approval, were involved in the study.

Instrument

The Collaboration Self-Assessment Tool (CSAT), developed by Ofstedal and Dahlberg (2009), is designed to assess the extent and quality of collaboration among individuals in group settings. It aims to help participants reflect on their engagement, communication, and interaction within a team. The tool consists of a series of items or questions that focus on key aspects of collaboration, such as communication, cooperation, conflict resolution, decision-making, and shared responsibility.

Administered as a self-assessment, the CSAT allows students to reflect on their contributions to the collaborative process. In this study, the CSAT was used as both a pre-survey and post-survey to measure changes in students' collaborative behaviors and attitudes before and after the ACS intervention. The tool has undergone face and content validity by qualified experts from the department and has a Cronbach's alpha reliability index of $\alpha = 0.84$.

Scoring Guide

The scoring guide for the Collaborative Self-Assessment Tool is as follows:

Intrapersonal Score Range	Intrapersonal Score Range	Overall Score Range	Descriptor
19-24	16-20	35-44	Established
14-18	12-15	26-34	Developing
6-13	5-11	10-25	Emerging

The overall score range scoring follows the guide indicated by Ofstedal and Dahlberg (2009), while the Intrapersonal and Interpersonal score ranges were computed based on the percentage distribution of the overall score range.

Data Collection Procedure

The school principal and the chairperson of the English Department sought and granted permission to conduct the study. Assent and consent forms were distributed to the students and

their parents. The study only included students who agreed to participate and whose parents provided consent.

All participating students received the ACS intervention, which was implemented during the second and third quarters of the school year. Prior to the intervention, a pre-survey was administered using a self-assessment questionnaire to measure their initial level of collaboration. After the intervention, the same questionnaire was used for the post-survey to determine any self-perceived changes in collaborative behavior. Following the post-survey, students were interviewed to gather qualitative insights about their experiences with the intervention. The quantitative data was analyzed using descriptive and inferential statistical measures, while the qualitative data collected through interviews was analyzed using a thematic frame.

Data Analysis

Problem 1 uses descriptive statistics, particularly average total scores, to measure the level of students' self-assessed group collaboration skills. Problem 2 uses a t-test to find out whether there is a significant difference between the students' self-assessed levels of group collaboration before and after ACS intervention. Lastly, Problem 3 employs Braun and Clark's (2006) thematic analysis framework to analyze the qualitative data gathered from interviews.

Results

Research Question 1: What are the students' self-assessed levels of group collaboration skills as measured by the Pre-survey and Post-survey before and after ACS intervention?

Table 1 presents the frequency and percentage of the scores in the Pre-survey and post-survey using the Collaboration Self-Assessment Tool (CSAT).

Table 1

Frequency and Percentage Table of Students' Self-assessed Levels of Group Collaboration

Description	Pre-survey		Post-survey	
	f	%	f	%
Established	97	37.74	133	51.75
Developing	147	57.20	112	43.58
Emerging	13	5.06	12	4.67

The data presented in Table 1 reflects the self-assessed levels of group collaboration among students before and after a certain intervention or period of engagement. Based on the pre-survey results, a majority of the students (57.20%) rated themselves at the "Developing" level of group collaboration, while 37.74% considered themselves at the "Established" level, and only 5.06% identified as being at the "Emerging" level. A positive change is clear in the post-

survey. The number of students who rated themselves as "Established" increased significantly to 51.75%, indicating a stronger sense of confidence and perceived competence in collaborative work. Meanwhile, those in the "Developing" category decreased to 43.58%, suggesting that many students felt they had progressed to a higher level of collaboration. The percentage of students who saw themselves as "Emerging" also slightly declined from 5.06% to 4.67%. Overall, the data suggests that students reported growth in their collaborative skills after the ACS intervention, with more students perceiving themselves as capable and effective contributors within group settings.

Table 2 presents the mean scores in the pre-survey and post-survey using the Collaboration Self-Assessment Tool (CSAT).

Table 2

Mean Scores of CSAT Pre-survey and Post-survey

	Intra personal	Description	Inter personal	Description	Overall	Description
Pre-survey	17.8	Developing	15.3	Developing	33.1	Developing
Post-survey	18.6	Established	16.1	Established	34.7	Established

The pre-survey results show that students' group collaboration levels were at the "Developing" stage across all dimensions: intrapersonal (M = 17.8), interpersonal (M = 15.3), and overall (M = 33.1). After the implementation of the ACS intervention, post-survey scores improved across the board, with students reaching the "Established" level: intrapersonal (M = 18.6), interpersonal (M = 16.1), and overall (M = 34.7).

This indicates an observable improvement in the students' perceived abilities in both self-regulation and interpersonal interactions within their groups, highlighting the positive impact of the ACS intervention on student collaboration.

The results of both Table 1 and Table 2 point to an increase in students' self-assessed levels of group collaboration skills, as made evident in more students rating themselves at the 'Established' level and in the increased mean from 'Developing' to 'Established'. This is as ACS provides time for students to regroup and discuss the achievement of their daily goals, as well as to reflect on their group concerns and the solutions to them. As Ganske (2017) mentions, lesson closure provides space for students to digest and assimilate their learning and to realize why it all matters.

Research Question 2. What is the difference between the students' self-assessed levels of group collaboration skills before and after the ACS intervention?

Since the normality assumption was not met when computed using Shapiro-Wilk normality test, the researchers decided to use the Wilcoxon Signed Rank Test to check for significant differences.

Table 3 presents the results of the Wilcoxon Signed Rank Test for Significance between the CSAT pre-survey and post-survey results per item.

Table 3

Wilcoxon Signed Rank Test Results per Item

Item	Pre-survey Mean	Post-survey Mean	W
Item 1. Contribution	2.98	3.11	2893**
Item 2. Motivation/Participation	3.04	3.15	3987**
Item 3. Quality of Work	2.90	3.03	3447**
Item 4. Time Management	2.86	3.00	4774**
Item 5. Team Support	2.89	3.16	2375***
Item 6. Preparedness	3.09	3.19	4939*
Item 7. Problem Solving	2.90	3.13	2967***
Item 8. Team Dynamics	2.97	3.17	3868***
Item 9. Interactions with Others	3.52	3.45	4093ns
Item 10. Role Flexibility	3.00	3.07	4725ns
Item 11. Reflection	3.05	3.17	5495*

The analysis indicated that students experienced improvements in various aspects of their collaborative efforts.

In Item 1 - Contribution, the mean self-rating increased from 2.98 to 3.11 (W = 53, p = 0.0022), indicating that students saw themselves as more open to freely sharing ideas, information, and resources with peers. For Item 2—Motivation/Participation, the mean rose from 3.04 to 3.15 (W = 81, p = 0.01), suggesting a greater willingness to remain engaged in group

tasks, even when those tasks did not directly relate to their personal interests. This conclusion is supported by an FGD response, as one student mentioned, "I was able to learn how to collaborate with others and learn how to be a valued team member" (A7, 10). These findings are also further supported by Pi et al. (2018), who mention that students who are highly open to experience and who are exposed to a relatively large number of original ideas presented by their peers are found to be the most creative and pay the most attention to their peers' original ideas. Activities like ACS encourage students to share their ideas and maintain interest in their work by allowing them to see their classmates' thoughts and prompting them to contribute their perspectives.

In Item 3 - Quality of Work, students' self-ratings improved from 2.90 to 3.03 ($W = 61.5$, $p = 0.0031$), reflecting a stronger sense of responsibility and commitment to producing high-quality work. Item 4 - Time Management showed a similar pattern, with the mean increasing from 2.86 to 3.00 ($W = 73.5$, $p = 0.0069$), indicating that students saw themselves as more effective in managing their time and meeting deadlines. Studies show that students' quality of work (Cohen & Lotan 2014) and time management (Holmefur et al. 2019) improve when groupings are structured and accountability measures, like ACS, are implemented, as students are constantly mindful of their outputs and are kept on a timeline.

A highly significant improvement was observed in Item 5—Team Support, where the mean increased from 2.89 to 3.16 ($W = 111$, $p < 0.0001$), suggesting that students felt more supportive of and respectful toward their team members in and outside the group setting. This modification is also made apparent in the FGD when students mention how, "It helps our group take ideas from others and see what we still need to do to improve. As a listener, it's good to know where the class stands so that we can help each other." (C3, 18). ACS encourages inter- and intra-group support, as students listen to and learn from each other. Such behavior can be a manifestation of 'exploratory talk,' which involves sharing ideas for joint discussion, where they are examined, challenged, and refined to reach the best possible solution (Mercer et al. 2004).

In Item 6 —preparedness, students rated themselves higher after the intervention, with the mean rising from 3.09 to 3.19 ($W = 71.5$, $p = 0.0217$), indicating more consistent readiness for collaborative tasks. Another student said, "We were able to identify the things we needed to do, especially if it's beyond what we can do in the classroom." (F1, 30) The improvement in preparedness could stem from ACS' nature as a closure activity, creating opportunities for students to engage in thoughtful discussions (Ewell & Rodgers 2014), which includes planning future directions.

Item 7 - Problem Solving saw a notable increase from 2.90 to 3.13 ($W = 117$, $p < 0.0001$), with students viewing themselves as more open-minded and inclusive during group problem-solving. This finding is similar to that of Murphy et al. (2018), which found that facilitating small-group discussions in the classroom increased students' critical-analytic thinking. Similarly, Item 8—Team Dynamics—improved from 2.97 to 3.17 ($W = 112$, $p < 0.0001$), suggesting that students became more aware of their impact on the team and better able to adjust their behavior accordingly. This points to the socio-emotional benefits of collaborative activities, which are manifested through socio-emotional interactions, effective task management, and relationship management (Baucal et al. 2023).

However, Item 9—Interactions with Others showed no significant change, with the mean decreasing slightly from 3.52 to 3.45 ($W = 2.5$, $p = 0.9362$). This result may indicate a ceiling effect, as students already rated themselves highly in this area before the intervention. Item 10 -

Role Flexibility—also did not show a significant change (mean: 3.00 to 3.07, $W = 46$, $p = 0.0657$), although there was a slight upward trend in students' comfort with shifting between leadership and followership roles.

Finally, Item 11 - Reflection revealed a significant increase in self-perception, with the mean rising from 3.05 to 3.17 ($W = 81.5$, $p = 0.0113$), suggesting that students engage more frequently in thoughtful reflection after collaborative activities. An FGD response also said, "Not all team members know which part they are in the task; ACS makes us reflect on what we have been doing." (C1, 13). ACS is highly reflective in nature, as students become more cognizant of their own achievements and concerns, sharing these with their groupmates and, eventually, the class. Post-groupwork processing like ACS helps students become 'metacognitively wise' about their group work skills and their performance as well (Kutnick and Blatchford 2013), which helps students gain a deeper understanding of how they learn (Gocić, Vujnović, and Stevović 2024).

Overall, the findings indicate that students rated themselves significantly higher in 9 out of 11 collaboration competencies following the intervention. These results highlight improvements in key areas such as contribution, participation, team support, problem solving, and self-reflection—demonstrating a positive shift in students' collaborative behaviors and self-awareness.

Table 4 presents the results of the Wilcoxon Signed Rank Test for Significance between the CSAT pre-survey and post-survey overall results.

Table 4

Wilcoxon Signed Rank Test for Significance

Group Collaboration	Wilcoxon W
Interpersonal	6323***
Intrapersonal	8208***
Over-all	9681***

Note. $H_a\ \mu_{\text{Measure 1 - Measure 2}} < 0$ ***p <.001

It was found that there is a highly significant difference ($W = 9681$, $p < .001$) between the pre-survey and post-survey results, indicating that there was a significant improvement in the students' perceived collaborative skills. This statement is also true for the Interpersonal ($W = 6323$, $p < .001$) and Intrapersonal ($W = 8208$, $p < .001$) components. These confirm Panadero and Alonso-Tapia's (2013) findings that peer collaboration and self-regulation are both needed for the success of group-related outputs and activities. These also further support the earlier

finding that the ACS intervention was effective in improving the students perceived levels of group collaboration.

Research Question 3: What are the students' experiences during the ACS intervention?

From focus group discussions, three major themes were identified relating to the students' experiences:

Self-Awareness Through Peer Comparison

The ACS sessions allow some students to hear other groups carry out their tasks so that they can compare themselves against all said progress. This helps them to better analyze their group's strengths and weaknesses. For instance, one student noted, *"I realized that it wasn't just us that was struggling."* (AR2, 16), while another mentioned, *"I kept track of other groups' performance and used that to reflect on how our group was doing."* (F2, 18).

This activity relates to the factors argued for by Ndoye (2017), according to which students' self- and peer assessments help them to better monitor and modify their learning processes. While peer benchmarking may increase motivation for some students, it is crucial to consider that other students may feel more anxious or less confident in their abilities, particularly if comparisons are viewed negatively.

Emotional Growth and Confidence Building

The students' emotional growth appears to have benefited from the ACS intervention. Some students first felt mentally intimidated by other groups' perceived accomplishments. As one student said, "*When I hear others' accomplishments, sometimes I feel less confident*." (A3, 19) Nevertheless, this exposure over time seems to foster motivation, as another student shared, "*When sharing, I feel extremely pressured but in a positive way. I'm a competitive student, so when I hear other groups' accomplishments for the day, it motivates me to do more."* (H2, 21)

This duality highlights the complex link between social comparison and emotional growth. Rania et al. (2021) argue that well-designed classroom activities to express and reflect on emotions can boost students' emotional control and people skills. Yet, without proper guidance, these methods might raise stress levels or make some students feel inadequate.

Enhanced Communication and Group Synergy

Students repeatedly emphasized the ACS activity's usefulness in increasing intra-group communication. ACS supported transparency and group problem-solving by offering a forum for discussing accomplishments and issues. As students say, "*Personally, it's beneficial for me because it makes it easier to identify my achievements for the day and the problems I need to resolve. It's a great way for everyone to assess their progress."* (P1, 3-4) "Not all team members are aware of their specific roles in the task; ACS encourages us to reflect on our contributions." (C1, 13)

Further study supports these premises by demonstrating that structured reflection enhances both collaboration and interaction. For example, groups are more cohesive and have better task coordination when they learn together, take the time to provide feedback, and reflect on their work. A study conducted by Haley (2019) highlights that teams who took the time to consider how each member's work contributed to the group's objectives performed significantly better than those that did not. Similarly, Matsuo (2016) emphasizes that reflection not only enhances communication but also builds a sense of responsibility and camaraderie among team

members. However, the effectiveness of these strategies frequently hinges on the group's existing dynamics and the leader's ability to facilitate discussions. Hedman (2016) stresses that strong team communication, both in thoughts and feelings, is crucial, and leaders play a big part in handling different types of people in the group and making sure everyone works well together.

Discussion

The findings of this study point out the importance of structured reflective practices, such as the Achievements-Concerns-Solutions (ACS) intervention, in strengthening collaboration among junior high school students. The problem of fostering authentic collaboration remains a central challenge in contemporary education, as groupwork often fails to move beyond task completion into genuine cooperative engagement. By demonstrating that ACS enhances both intrapersonal and interpersonal dimensions of collaboration, this study affirms that accountability, reflection, and shared problem-solving can be systematically cultivated rather than assumed to emerge naturally in student groups.

However, while the ACS intervention proved rather beneficial, there are students who found it ineffective against such issues as unequal participation. As a student noted, "*as a listener and as the leader, it's not really effective. Even though some of my members say they did something, they're not actually doing anything, which leads to dishonesty*." (P3, 25-26) This observation indicates a limitation of denial: although group reflection is encouraged, it does not seem sufficient to uphold individual accountability, nor does it equally motivate all students. In addition, unequal involvement is a component of all collaborative language, including the widely used term "social loafing" (Aggarwal & O'Brien, 2008).

> To address this gap, other methods like peer assessment and individual accountability can be incorporated into the intervention to maximize its effectiveness. As noted by Adesina et al. (2022), peer assessment enhances individual accountability because students realize the impact of their contribution to the group. Integrating group activities with individual grading minimizes social loafing since there is transparency among the group members regarding each person's input toward the shared outcome (Waletzko, 2021). Also, Rasooli et al. (2024) highlighted several recommendations for group evaluation procedures aimed at ensuring fairness and transparency, including structured criteria and definable responsibilities.

Moreover, a recent study suggests that pairing reflection with peer-review activities enhances self-regulation and motivation. Dutta et al. (2023) explain that students who participate in peer evaluation become more self-sufficient and develop an increased awareness of interpersonal relations and responsibilities. Reflexive and feedback processes enhance self-regulation to a higher level in students, which is critical for participating in academics and engaging in team exercises.

The results underscore significant educational issues regarding the cultivation of 21st-century skills in students, particularly in communication, critical thinking, and teamwork, which are vital across various disciplines and future employment settings. The significant improvements confirmed by both quantitative and qualitative data support propositions that structured reflection enhances metacognitive awareness, promotes equitable participation, and

fosters a culture of shared responsibility. At the same time, the absence of a control group and the reliance on self-report measures suggest that findings should be interpreted with caution, pointing to the need for further, more rigorous investigations.

These findings suggest that interventions like ACS can serve as a model for transforming group activities into meaningful collaborative learning experiences. In doing so, they contribute to the larger discourse on how educators can intentionally design classroom practices that nurture not only academic achievement but also the social and interpersonal competencies required for lifelong learning and active participation in society.

Conclusion

The findings reveal that students reported notable growth in both their interpersonal and intrapersonal collaborative skills following the ACS intervention, with more learners perceiving themselves as capable and effective contributors within group settings. The results emphasize the value of both peer collaboration and self-regulation in ensuring the success of group-related outputs and activities, further supporting the effectiveness of ACS in improving students' perceived levels of collaboration. Gains were most evident in areas such as team contribution, motivation and participation, quality of work, time management, team support, preparedness, problem-solving, team dynamics, and reflection. Moreover, the data highlights that students developed greater self-awareness through peer comparison, experienced emotional growth and confidence building, and enhanced their communication and group synergy. Despite these positive outcomes, challenges such as unequal participation and instances of social loafing also emerged, pointing to areas that warrant further attention in future applications of ACS.

The findings carry several important implications for teaching, learning, and classroom practice. First, the demonstrated growth in students' interpersonal and intrapersonal collaborative skills suggests that structured interventions like ACS can be powerful tools for cultivating both individual responsibility and collective engagement. This implies that teachers should intentionally integrate reflective, structured activities that balance self-assessment with peer evaluation to foster accountability and collaboration. Second, the improvements across dimensions such as motivation, time management, problem-solving, and team dynamics highlight the broader applicability of ACS beyond research tasks, suggesting its potential to strengthen 21st-century skills necessary for higher education and future workplaces. Third, the evidence of self-awareness, emotional growth, and confidence building underscores the importance of providing learners with opportunities for peer comparison and reflection, as these experiences contribute not only to academic collaboration but also to personal development.

However, the challenges of unequal participation and social loafing reveal that collaborative interventions must also be paired with strategies to ensure equitable contribution and sustained engagement. This implies that educators and school administrators should explore complementary measures, such as clearer role distribution, progress monitoring, and accountability systems, to mitigate these difficulties. Overall, the study reinforces the need for schools to prioritize structured, reflective interventions like ACS in promoting both academic and socio-emotional growth among learners.

To maximize the effectiveness of the ACS intervention, teachers are encouraged to embed it as consistent practice in classroom activities. Follow-ups on previously assigned tasks should be systematically incorporated to ensure continuity of learning and progress monitoring. Rather than focusing solely on reporting outputs, the activity should emphasize accountability, encouraging students to take ownership of both individual and group responsibilities. Beyond research tasks, ACS can also be applied across different subject areas to further enhance learners' critical thinking, leadership, and problem-solving abilities. By positioning ACS not only as a reflective tool but also as a developmental approach, educators can prepare students for long-term collaborative engagement that extends beyond the classroom.

For school administrators, it is recommended to provide support by integrating ACS into school-wide practices for collaborative learning. Training sessions and professional development opportunities can be offered to teachers to ensure consistent and effective use of the intervention, alongside other closure activities. By institutionalizing ACS as part of classroom culture, administrators can help create a learning environment that consistently values collaboration, reflection, and accountability.

Future researchers are encouraged to expand the scope of inquiry by including a more diverse range of participants across grade levels, schools, or learning contexts. Incorporating demographic variables could offer more details about how different learner characteristics affect the effectiveness of ACS. It is also suggested to use more than one source of data, like teacher observations, peer evaluations, or performance-based measures, to cross-check results and make them more reliable. Longitudinal studies may also reveal whether ACS contributes to sustained improvements in collaboration and related skills over time.

While the study highlights the effectiveness of the ACS intervention, the researchers point out several limitations and areas for further research. First, this study is limited by its focus on a single grade level and subject area, specifically Grade 10 students engaged in English research tasks, which may restrict the generalizability of the findings to other grade levels, disciplines, or school contexts. The use of total population sampling further constrained participation for those who submitted both assent and parental consent forms, potentially excluding the perspectives of students who may differ in collaboration styles or experiences. Additionally, reliance on self-reported survey responses in the Collaboration Self-Assessment Tool (CSAT) introduces the possibility of response bias, as students may have over- or underestimated their collaborative skills. While interviews enriched the data with qualitative insights, the scope of participants and the time frame, which is limited to two academic quarters, restricted the exploration of long-term effects of the ACS intervention. Students' profiles, such as sex, L1, motivation, and other factors that could contribute to collaboration, were also not considered. Another limitation is the absence of reported effect sizes, which restricts the ability to gauge the magnitude of the ACS intervention's impact beyond statistical significance. Finally, the absence of a control group limits the ability to attribute improvements in collaboration solely to the ACS intervention, as other classroom or developmental factors may also have influenced student outcomes.

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