The Effectiveness of Implementing the Timed Pair Share Strategy (TmPS) on Active Teacher and Student Engagement in the Teaching and Learning (Pdpc) Process

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ARTICLE INFO

ABSTRACT

This study investigates the effectiveness of the Timed Pair Share strategy (TmPS), a cooperative learning approach designed to enhance students' active engagement through structured partner discussions. While cooperative learning is recognised for improving interaction and critical thinking, limited research has explored the specific impact of TmPS in authentic classroom settings. The study examines students' engagement levels before and after implementation, assesses its effectiveness in promoting active participation among teachers and students, and identifies challenges such as time constraints, unequal proficiency, and inconsistent application. A quantitative survey of 130 secondary school teachers and students was conducted, with data analysed descriptively using tables and graphs. The results show that before implementing TmPS, 70% teachers agreed that few students actively responded, while 64% reported limited attention, and 62% noted low interest in group work. After implementation, 68% students agreed it improved their self-confidence, while 59% students agreed TmPS facilitated their understanding, and only 36% students agreed that earlier lessons were boring, indicating that pre-intervention learning was acceptable but not interactive. After implementation, engagement improved, with 62% teachers agreeing that the strategy enhanced assessment, while 58% confirmed better time management, and 53% agreed that it made PdpC student-centred easier. Students also affirmed its impact, with 77% students reporting increased focus and 70% students indicating increased motivation, while only 66% students said TmPS was helpful. Overall, TmPS effectively improved engagement. Despite these gains, challenges remained. 68% teachers agreed that TmPS required careful time management, 62% teachers reported that some students relied too much on their partners, and 51% teachers agreed that students took a longer time to respond. Among students, 57% agreed that discussion time was insufficient, 52% struggled with generating ideas, and only 29% reported difficulty collaborating. The findings indicate that TmPS effectively enhances student engagement,

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interaction, and communication when implemented with careful planning and monitoring. Its success relies on strategic pairing, effective time allocation, and teacher facilitation to ensure balanced participation. Despite challenges, TmPS promotes student-centred learning and meaningful dialogue, supporting both confidence and active involvement in the teaching and learning process.

1. Introduction

1.1 Research Background

Timed Pair Share is a cooperative learning strategy where students work in pairs within a set time to share ideas before switching roles [1]. As part of the Kagan Cooperative Learning framework, it ensures equal speaking opportunities, reduces interactional imbalance and promotes idea development before verbal expression [2].

In online and hybrid learning environments, webinar platforms with breakout rooms provide additional support for structured pair work. After introducing the topic, teachers assign students into pairs where Student (A) explains the content and Student (B) summarises or seeks clarification. According to Rakha [3], this timed cycle promotes active participation regardless of learners' proficiency levels. The model aligns closely with Kagan's principles of Positive Interdependence and Equal Participation [4].

Timed Pair Share has been shown to strengthen student engagement by offering structured moments to think, communicate and exchange ideas. Studies [5] highlight improvements in focus, confidence, and cognitive outcomes, especially in online settings where equitable participation is essential. Cooperative structures such as Timed Pair Share also increase student talk time and encourage two-way interaction, supporting 21st-century learning goals [2].

Research further demonstrates that Kagan-based strategies improve academic achievement, motivation and critical thinking when implemented effectively [6]. In language education, similar gains in confidence and communicative competence have been reported [7]. Recent studies also show that Timed Pair Share adapts well to digital teaching environments [8]. However, its effectiveness depends heavily on teacher monitoring, appropriate time allocation, strategic pairing and adequate training [3].

1.2 Literature Review

Increases in student engagement have been observed when discussions are organised through structured methods such as Timed Pair Share, as this structure ensures more systematic and balanced turn-taking. Teachers also report improvements in peer interaction and students' confidence in expressing their ideas when TmPS is implemented consistently [9]. This effectiveness is further supported by the Remap-TmPS model developed by Zubaidah *et al*., [6] which demonstrated significant improvements in critical thinking skills. Students not only performed better on higher-order assessments but were also more capable of justifying their responses, indicating that Timed Pair Share facilitates idea exploration and analytical reasoning through structured two-way dialogue [6].

Findings from the British Journal of Education, Learning & Development Psychology similarly indicate that cooperative strategies such as Timed Pair Share enhance motivation, promote readiness to learn and support affective development, as learners are given dedicated thinking time before sharing their views without competitive pressure [10]. Timed Pair Share can also be effectively

adapted to digital classrooms through the use of breakout rooms and timers. These findings reaffirm that Timed Pair Share is effective not only in face-to-face settings but also in hybrid and online learning environments [3].

Teachers who adopt Timed Pair Share report that the structure enables clearer and more systematic organisation of lessons, facilitates time management and supports effective monitoring of student progress [11]. Cooperative learning strategies such as Timed Pair Share also reduce teacher dominance and strengthen the teacher's role as a facilitator, thereby increasing 'student talk time' an important indicator of active engagement [8]. In addition, Timed Pair Share provides opportunities for teachers to assess individual student abilities through paired interactions, in contrast to whole-class questioning sessions that are often dominated by only a few students [12].

However, Handayani [13] identified that several implementation challenges have been identified in previous studies. These include difficulties in allocating sufficient sharing time within limited instructional periods, particularly when teachers face tight schedules. Teachers also encounter challenges in forming suitable student pairs in heterogeneous classrooms, wide ability gaps may result in one student dominating while the other becomes overly dependent [7]. Although Timed Pair Share can support shy learners, many still require additional scaffolding, such as sentence starters to help them respond effectively [4]. Moreover, the effectiveness of Timed Pair Share is highly dependent on teachers' understanding of Kagan principles and the mechanics of the structure. Without adequate training and conceptual clarity, Timed Pair Share risks becoming a routine activity with minimal instructional impact [14].

1.3 Problem Statement

Studies conducted between 2020 and 2025 indicate that cooperative learning structures such as Timed Pair Share have the potential to enhance interaction, critical thinking and student engagement [9]. However, empirical research that specifically examines the effectiveness of Timed Pair Share on active engagement in teaching and learning remains limited, particularly within real classroom settings that consist of students with varying levels of ability [8].

Most existing research focuses on cooperative learning in general or on other Kagan structures, such as Rally Robin and Numbered Heads Together, whereas assessments of changes in student engagement before and after the implementation of Timed Pair Share have received comparatively little attention [14]. This raises questions regarding the extent to which Timed Pair Share truly influences student engagement within contemporary instructional contexts.

Furthermore, teachers have reported various implementation challenges, including time management, appropriate pairing of students, differences in student proficiency levels and limited teacher training in Kagan structures [10]. These challenges highlight the need for a systematic evaluation of Timed Pair Share effectiveness and the identification of actual issues that may hinder its successful implementation.

Therefore, this study is conducted in response to a significant research gap concerning the level of student engagement before and after the use of Timed Pair Share, the actual effectiveness of Timed Pair Share in enhancing teacher and student engagement and the challenges faced by teachers and students during the implementation of this strategy.

1.4 Research Objectives

Based on the identified research problem, this study aims to identify the level of active student engagement before and after the implementation of the Timed Pair Share strategy in the teaching

and learning process, to evaluate the effectiveness of this strategy in enhancing active engagement among both teachers and students during classroom activities, and to identify the challenges faced by teachers and students in implementing the Timed Pair Share strategy, including issues related to time management, student readiness, and practical constraints in the classroom.

2. Methodology
2.1 Research Design

This study employed a quantitative survey approach using a questionnaire as the main research instrument to assess the effectiveness of the Timed Pair Share strategy in promoting active engagement of teachers and students in secondary school learning. The questionnaire was distributed and collected online via Google Forms to both teachers and students. The quantitative survey approach was selected because it is suitable for researchers to efficiently collect data and obtain a clear picture of respondents perceptions and experiences, thereby achieving the study objectives [15]. In addition, using Google Forms as a questionnaire is considered the most appropriate method for collecting information, as it facilitates rapid dissemination and data collection without requiring the researcher to be constrained by the respondents locations, while also saving time [16]. Therefore, this approach also enhances the reliability of the collected data and ensures that the data collection process is conducted in a systematic and well-organized manner.

The questionnaire was designed to measure four main aspects of the study: respondent demographics, active engagement in learning using the Timed Pair Share method, perceptions of the effectiveness of the Timed Pair Share strategy in learning, and the challenges faced by teachers and students during the implementation of the strategy.

2.2 Participant

The study involved a diverse group of teachers and secondary school students from Form 1 to Form 5. The questionnaire was distributed randomly to teachers and students from several different secondary schools to ensure that each individual had an equal opportunity to be selected as a respondent. The total sample size was 130 participants, consisting of 57 students and 73 teachers, to ensure that the number was sufficient to provide a clear descriptive overview of engagement levels and perceptions regarding the effectiveness of the Timed Pair Share strategy. Selecting respondents from multiple schools and grade levels also ensured that the study did not focus on a single group, thereby producing more balanced responses aligned with the study's objectives.

2.3 Research Instrument

The research instrument used a questionnaire via Google Forms, which had two different sets of questions according to the target of each group, namely teachers and students. The questionnaire was built based on the same research objectives, but the items presented differed in terms of the teaching and learning context. In the distributed questionnaire, it was divided into four sections, namely demographics (Section A), Active Student Engagement containing 6 items (Section B), Effectiveness of the Timed Pair Share Strategy containing 5 items (Section C), and Challenges in implementing the strategy containing 5 items. Sections A, B, and C used a 4-point Likert scale, namely 1- Strongly Disagree, 2- Disagree, 3- Agree, 4- Strongly Agree. By using the scale consistently across the questionnaire items, the researcher can measure responses accurately [17].

2.4 Data Collection Procedure

Data collection in this study was carried out through a questionnaire using Google Forms. Before the questionnaire was distributed to respondents, its content was carefully reviewed in terms of content to ensure the accuracy of language and context [18]. In addition, the content was evaluated and reviewed by an education lecturer to ensure content validity in line with the research objectives. The questionnaire was distributed online through several channels, including WhatsApp, Telegram, and via class teachers to facilitate access for teachers and ensure responses were obtained from multiple schools. The data collection process for teachers and students lasted for two weeks, from 10 November 2025 to 24 November 2025. Throughout the data collection, all responses were automatically recorded in the Google Forms system. For data analysis, the researcher used Microsoft Excel to interpret the distribution of respondents' answers. The data were translated into graphs and tables to facilitate reading and enable systematic and accurate analysis [19]. This approach enables the researcher to identify response patterns more clearly and to support the research findings in an empirical and structured manner.
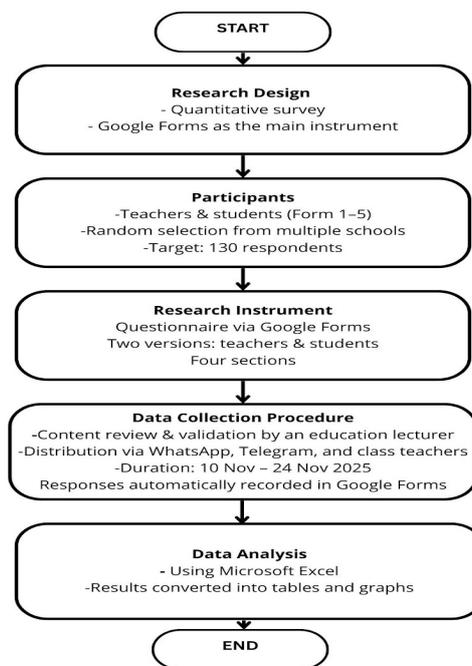

Fig. 1. Research methodology for assessing the Timed Pair Share Strategy

3. Results
3.1 Pressure Distribution

The first objective is to identify the level of students' active engagement before and after the implementation of the Timed Pair Share strategy in teaching and learning (PdPc).

3.1.1 Objective 1: Teacher

List of questions:
1. Before the implementation of the Timed Pair Share strategy, students paid limited attention during teaching and learning (PdPc) sessions.

2. Students demonstrated low interest in group activities before the implementation of the Timed Pair Share strategy.

3. Before the Timed Pair Share strategy was implemented, only a small number of students were actively responding to the teacher's questions.

4. The Timed Pair Share strategy helps enhance the level of interaction and collaboration among students during teaching and learning (PdPc).

5. Students show greater interest and focus during PdPc activities after the implementation of the Timed Pair Share strategy.

6. Students are more active in asking questions and responding to the teacher after the Timed Pair Share strategy is used.
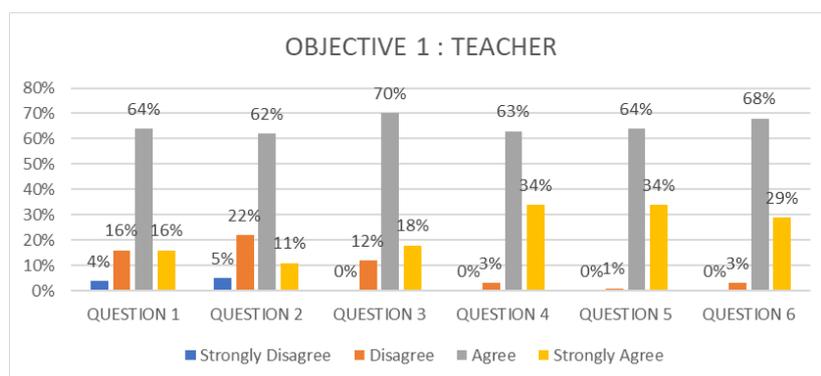

Fig. 2. The percentage of teachers responding to the questions for objective 1

Fig. 2 shows the number of teacher respondents who answered questions related to achieving Objective 1. The question with the highest 'Agree' responses was Question 3, where 70% teachers (52 respondents) agreed that before implementing the Timed Pair Share strategy, only a small number of students actively responded to the teacher's questions. Therefore, this is consistent with the statement that the cooperative learning framework, such as Timed Pair Share, ensures equal speaking opportunities, reduces interactional imbalance, and promotes idea development before verbal expression as noted [2]. Overall, this data confirms that the level of student engagement in question-and-answer sessions was low before the introduction of the strategy.

Next, the number of teachers who indicated a moderate level of agreement for Objective 1, with 64% teachers agreeing (48 respondents), is Question 1. Findings for Question 1 indicate that the majority of teachers agreed that before the implementation of the Timed Pair Share strategy, students paid limited attention during teaching and learning (PdPc) sessions. Therefore, it is consistent that cooperative structures such as Timed Pair Share also increase student talk time and encourage two-way interaction, supporting 21st-century learning goals noted [2]. This shows that Timed Pair Share is significant in improving student attention during PdPc.

Lastly, according to Fig. 2, the lowest agreement among teachers was Question 2, where only 62% teachers agreed (46 respondents). Findings for Question 2 indicate that the majority of teachers agreed that interest in group activities was low before the implementation of the Timed Pair Share strategy. This is consistent with statements that Kagan-based strategies improve academic achievement, motivation and critical thinking when implemented effectively, as shown [6]. Thus, we can confirm that Timed Pair Share can improve the interest of students.

3.1.2 Objective 1: Student

List of questions:

1. Before the Timed Pair Share activity was introduced, I was less confident in sharing my opinions during classroom learning sessions.
2. The teaching and learning environment (PdPc) before the implementation of the Timed Pair Share activity was sometimes boring and passive.
3. Before the Timed Pair Share activity was introduced, I preferred listening to the teacher rather than engaging in discussions.
4. I feel more confident sharing my opinions during the Timed Pair Share activity.
5. I find it easier to understand the lesson after discussing it with my partner during Timed Pair Share.
6. The Timed Pair Share strategy helps me improve my self-confidence in speaking in front of the class.
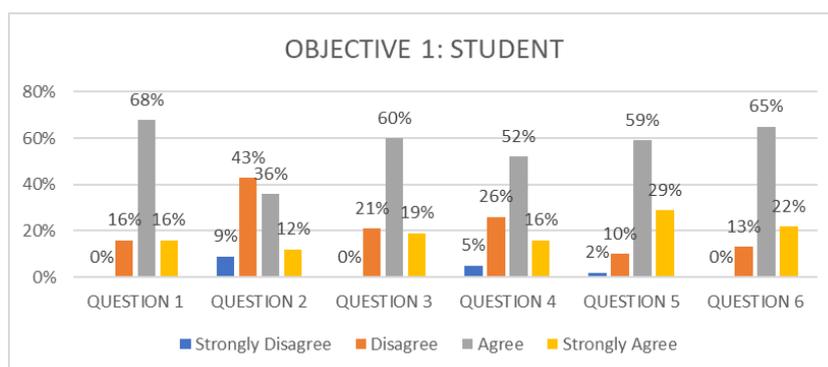

Fig. 3. The percentage of students responding to the questions for objective 1

According to Fig. 3, findings for Question 1 indicate that the majority of students, which is 68% students (39 respondents), selected "Agree" that before the Timed Pair Share activity was introduced, they were less confident in sharing their opinions during teaching and learning sessions. This is consistent with the statement that teachers also report improvements in peer interaction and students' confidence in expressing their ideas when TmPS is implemented, consistently highlighted [9]. This indicates that the Timed Pair Share strategy is effective in helping students enhance their confidence to speak in front of the class.

Next, the moderate student who selected "Agree" is Question 5, with 59% students (35 respondents) agreeing, which indicates that the majority of students agreed that engaging in peer discussions during the Timed Pair Share activity facilitated their understanding of the lesson. It is consistent with the statement that Timed Pair Share enhances motivation, promotes readiness to learn and supports affective development, as learners are given dedicated thinking time before sharing their views without competitive pressure [10]. This suggests an initial tendency among students toward a passive learning style. Therefore, it can be inferred that some students were more comfortable with traditional, teacher-centred approaches to teaching and learning.

Lastly, according to Fig. 3, the lowest agreement among students was Question 2, with 36% students agreeing (21 respondents). Question 2 reflects mixed student perceptions, however, there is a tendency toward disagreement with the statement that the lessons before the implementation of Timed Pair Share were boring and passive. This is inconsistent with the statement that Teachers who adopt Timed Pair Share report that the structure enables clearer and more systematic organisation of lessons, facilitates time management and supports effective monitoring of student progress, as shown [11]. The students' responses suggest that, despite the improved structure offered by the strategy, many did not perceive the earlier lessons as particularly boring. Instead, the data imply that students may have viewed pre-intervention lessons as acceptable or moderately engaging, even if not highly interactive.

3.2 Objective 2

The second objective is to evaluate the effectiveness of implementing the Timed Pair Share strategy in enhancing active engagement of teacher and student during the Teaching and Learning (PdPc) process.

3.2.1 Objective 2: Teacher

List of questions:
1. The implementation of the Timed Pair Share strategy improves my ability to manage time and Teaching and Learning (PdPc) activities more effectively.
2. I can assess students' understanding more easily through observation during paired activities when using the Timed Pair Share strategy.
3. The use of the Timed Pair Share strategy enhances the effectiveness of two-way communication between teachers and students.
4. The Timed Pair Share strategy facilitates the implementation of student-centered (PdPc)
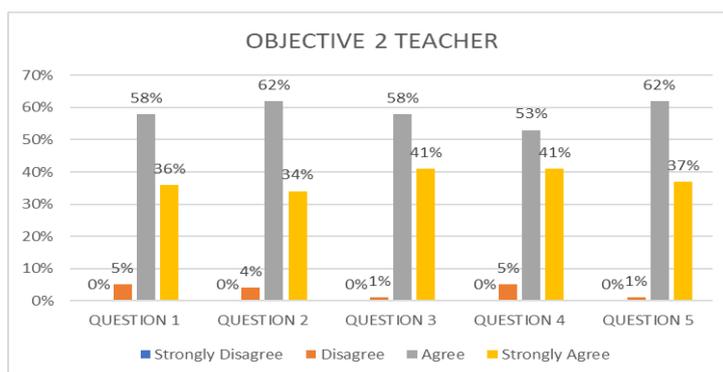5. The Timed Pair Share strategy assists me in planning Teaching and Learning sessions more systematically.

Fig. 4. The percentage of teachers responding to the questions for objective 2

Fig. 4 shows the five questions under Objective 2 answered by secondary school teachers. Based on these questions, the highest number of respondents selecting the 'Agree' scale was for Question 2, with 62% teachers (46 respondents). Most teachers agreed that Timed Pair Share facilitates teachers in assessing students' understanding through paired activities. This is consistent with the view that Timed Pair Share enables teachers to support the monitoring of students progress [11]. Therefore, this form of assessment allows teachers to identify students' level of mastery more quickly and authentically through immediate responses during the learning process.

Next, the number of teachers who indicated a moderate level of agreement for this objective was highest for Question 1, with 58% (43 respondents). For Question 1, the majority of teachers agreed that this strategy enhances their ability to manage time and learning activities more effectively. This aligns with the view that the strategy enables teachers to facilitate time management and monitor students' progress more effectively [11]. Therefore, teachers need to plan time management strategies so that each learning activity can be conducted more systematically.

Additionally, one of the questions with the lowest level of agreement among teachers was Question 4, where only 53% teachers (39 respondents) agreed that the Timed Pair Share strategy facilitates the implementation of student-centered Teaching and Learning (PdPc). This is consistent with the statement that challenges in implementing this strategy include difficulties in allocating

sufficient sharing time within the limited teaching period [13]. This finding indicates that teachers still face practical constraints that may affect the effectiveness of implementation in the classroom.

3.2.2 Objective 2: Student

List of questions:
1. The Timed Pair Share activities help me to maintain focus and stay actively engaged during the Teaching and Learning (PdPc) sessions.
2. I feel more motivated to learn when the teacher implements the Timed Pair Share strategy.
3. The Timed Pair Share strategy makes the learning sessions more enjoyable and interactive.
4. I find it easier to communicate and share ideas with peers during the Timed Pair Share activities.
5. Paired activities within the Timed Pair Share strategy enhance my ability to think critically.
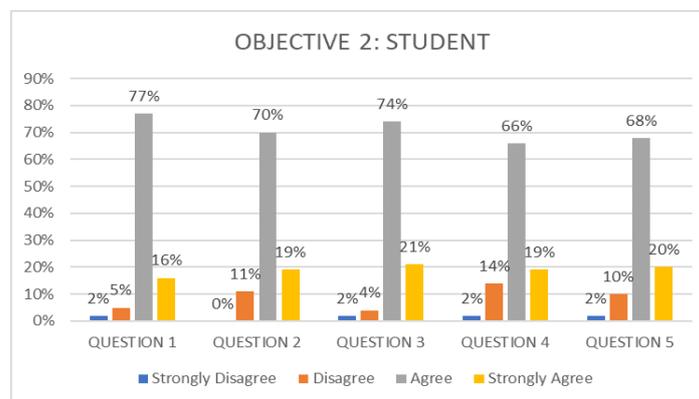

Fig. 5. The percentage of students responding to the questions for objective 2

Fig. 5 shows the five questions under Objective 2 answered by secondary school students. Based on these questions, the highest number of respondents selecting the 'Agree' scale was for Question 1, with 77% students (44 respondents). The students agreed that this activity helped them remain more focused and active during the teaching and learning process. These findings are consistent with the view that cooperative learning structures such as Timed Pair Share have the potential to enhance interaction, critical thinking, and student engagement [9]. Therefore, this indicates that such an approach can improve the quality of student engagement and support more interactive and collaborative learning.

Next, the number of students who demonstrated a moderate level of agreement for Objective 2 was highest for Question 2, with 70% students (40 respondents) agreeing that this activity increases their motivation in learning. This aligns with the statement that cooperative strategies such as Timed Pair Share enhance motivation, encourage readiness to learn, and support effective development [10]. Therefore, this strategy can increase students' motivation because they are given time to think before sharing their views without the pressure of competition.

Lastly, Question 4 which relates to students' ease of sharing ideas during Timed Pair Share, recorded the lowest agreement, with only 66% students (38 respondents). While some students found the activity helpful, others faced difficulties due to factors such as self-confidence, communication skills, or compatibility with their partner. Nevertheless, this strategy can support shy students, especially when aided by tools such as "sentence starters," which can help boost their confidence [12]. Therefore, this strategy can help students become more confident.

3.3 Objective 3

The third objective of this study is to identify the challenges faced by teachers and students in implementing the Timed Pair Share strategy.

3.3.1 Objective 3: Teacher

List of question:
1. Differences in students' proficiency levels make the management of the Timed Pair Share activity less effective.
2. It is difficult to assess individual students' understanding within a limited timeframe during the activity.
3. Students take too much time to provide feedback during the sharing session using the Timed Pair Share   strategy.
4. The implementation of the Timed Pair Share strategy requires careful time planning to ensure that all students can participate equitably.
5. Some students tend to rely on their partners and show less independent initiative during the activity.
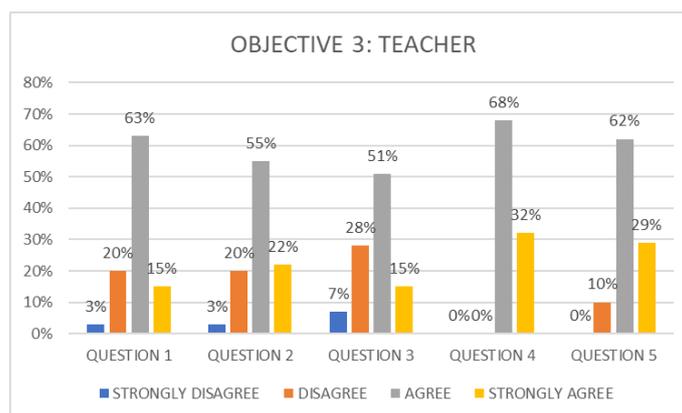

Fig. 6. The percentage of teachers responding to the questions for objective 2

Fig. 6 shows the five questions under Objective 3 answered by secondary school teachers. Based on these questions, the highest number selecting the 'Agree' scale was for Question 4, with 68% (50 respondents). Most teachers agreed that Timed Pair Share requires careful time planning to ensure equitable participation. Therefore, this is consistent with the statement that Timed Pair Share is a cooperative learning strategy where students work in pairs within a set time to share ideas before switching roles [1]. Thus, teachers must plan time carefully.

Next, the number of teachers who indicated a moderate level of agreement with Objective 3 was highest for Question 5, with 62% teachers (45 respondents) reporting that some students tend to rely on their partners and show less individual initiative during activities. Therefore, this contrasts with the cooperative learning structure of Timed Pair Share, which increases student talk time and promotes two-way interaction, supporting 21st-century learning goals [2]. Thus, Timed Pair Share is not necessarily effective for all students.

Besides, one of the questions with the lowest agreement among teachers was Question 3, where only 51% teachers (38 respondents) agreed that students took too long to respond during sharing sessions using the Timed Pair Share strategy. This aligns with the notion that the effectiveness of Timed Pair Share heavily depends on teacher monitoring, appropriate time allocation, strategic

pairing, and adequate training [3]. Therefore, the time allocated should depend on the type of activity conducted in the classroom.

3.3.2 Objective 3: Student

List of question:
1. The time allocated for the Timed Pair Share activity is insufficient for a thorough discussion with my partner.
2. I find it difficult to understand the instructions or tasks during the Timed Pair Share activity.
3. There are students who dominate the discussion, making it difficult for me to voice my own ideas during the Timed Pair Share activity.
4. I experience difficulties in collaborating with my partner during the Timed Pair Share activity.
5. At times, I do not have enough ideas to discuss with my partner during the Timed Pair Share activity.
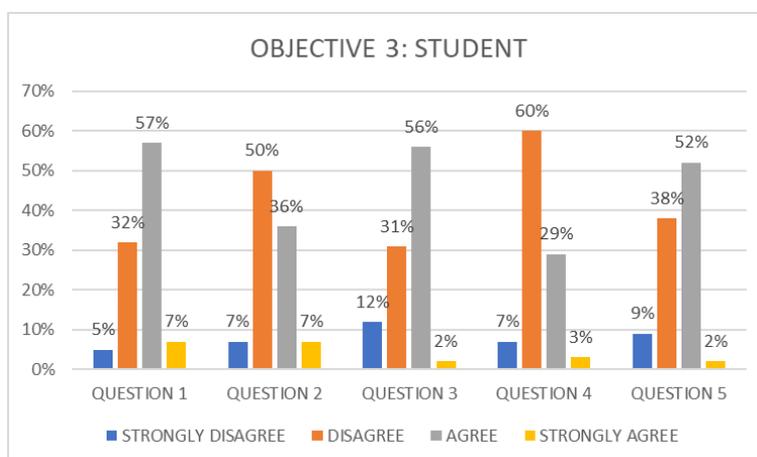

Fig. 7. The percentage of students responding to the questions for objective 3

Fig. 7 shows the number of secondary school student respondents who answered the questions related to achieving Objective 3. The question with the highest 'Agree' responses was Question 1, where 57% students (34 respondents) agreed that the time allocated for the Timed Pair Share activity was insufficient for thorough discussion with their partners. Therefore, this does not align with the claim that Timed Pair Share strengthens student engagement by providing structured time to think, communicate, and exchange ideas [2]. However, students were constrained by time to think effectively during the activity.

In addition, Question 5 recorded 52% students (30 respondents) who agreed that they did not have sufficient ideas to discuss with their partners during the Timed Pair Share activity, indicating a moderate level of agreement. However, Timed Pair Share is expected to enhance academic achievement, motivation, and critical thinking when implemented effectively [6]. Therefore, the effectiveness of student thinking depends on how the activity is conducted and the teacher's role as a facilitator.

Furthermore, the question that recorded the lowest level of agreement among students for achieving Objective 3 was Question 4, with only 29% (17 respondents) agreeing that students faced difficulties collaborating with their partners during the Timed Pair Share activity. However, this indicates that most students acknowledge that the activity increases student talk time and promotes two-way interaction, thereby supporting 21st-century learning goals [2]. Therefore, this activity has a positive impact on secondary school students.

4. Conclusions

In conclusion, the results from Objectives 1, 2, and 3 collectively demonstrate that the Timed Pair Share strategy contributes meaningfully to enhancing students' active engagement, confidence, and interaction in the classroom. Findings from Objective 1 show that both teachers and students reported low levels of participation, attention, and confidence before the strategy was implemented. After the introduction of Timed Pair Share, students displayed greater focus, improved confidence in expressing ideas, and better understanding through discussion with peers. Teachers similarly observed increased student involvement and interaction, supporting the view that cooperative learning structures provide equitable participation opportunities and encourage active contribution. However, a portion of students still preferred traditional teacher-centred approaches before intervention, suggesting that shifts in learning habits require time and consistent practice. In relation to Objective 2 and Objective 3, both benefits and challenges were identified. Teachers agreed that the strategy aided them in assessing student understanding, managing lessons systematically, and fostering more student-centred learning environments. Students also acknowledged improvements in motivation, enjoyment, communication, and cognitive engagement. These findings align with existing literature highlighting the positive effects of cooperative learning on academic and affective outcomes. Nonetheless, challenges emerged, particularly concerning limited time for sharing, differences in student proficiency, reliance on partners, and occasional difficulties in generating ideas. Teachers also noted constraints in forming balanced pairs and ensuring equitable participation within restricted lesson durations. Despite these limitations, most students recognised that the activity increased talk time and supported meaningful interaction, indicating that Timed Pair Share remains a beneficial strategy when implemented thoughtfully. Thus, its overall effectiveness depends on careful planning, strategic pairing, ongoing monitoring, and the teacher's role as a facilitator to ensure that all learners benefit optimally from the activity.

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