

Optimizing Quality Classroom Engagement and Thinking and Rethinking Processes in Social Studies Courses through a Wait-time Model (WTM)

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Abstract

The purpose of this study is to find out how the wait-time provided by professors to the students' influence their classroom engagement as well as their ability to think and re-think, both in the online and offline set-ups. The problem with wait-time during discussions is that it can hinder the flow of conversation and impede effective communication. One of the problems that confront students is the prolonged pauses or delays in responses that may lead to disengagement, loss of momentum, and decreased overall efficiency in exchanging ideas or information. This delay can be caused by various factors such as technical issues, hesitation in responses, or inadequate facilitation, all of which can contribute to a less productive and engaging discussion. This study used social-observation descriptive design, a form of scientific research. The samples were selected through purposive sampling, include three (3) classes from Bachelor of Secondary Education, majoring in Social Studies totaling 95 respondents and 5 social-science faculty members from the College of Teacher Education, City University of Muntinlupa, Philippines. The Survey on the Average Teacher's Wait-time Tool and Classroom Discussion through a Wait-time Tool, constructed by the researchers, observation, and interviews were used to gather data from the samples. The study found out that the Average Wait-Time on "Creating Questions" has the longest average wait-time at 2 minutes and 11 while "Remembering Questions" have the shortest wait-time at 41 seconds. There is a strong positive correlation between the average length of wait-time and active classroom engagement. Longer wait-times result in more engaged students, whether in online or face-to-face classes. And the correlation between Wait-Time and Thinking and Rethinking reveals that there is a moderately negative correlation which suggests that the length of wait-time and the thinking and rethinking process have an inverse relationship. Extended wait-times may lead to reduced cognitive activity, indicating a need for balance. These findings emphasize the importance of optimizing wait-time in educational practices to facilitate meaningful engagement and cognitive processing. Balancing the duration of wait-time is essential to harness its benefits effectively. The authors concluded that through quality wait-time, students would be able to further enhance their analytical, critical, and higher order thinking skills.

Keywords: Optimizing Quality Classroom Engagement, Thinking and Rethinking Process, Wait-time, Social Studies Courses



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INTRODUCTION

Wait-time is a teaching strategy that encourages students to engage more actively in social studies courses by providing them with pauses between statements and questions. This

intentional "wait time" gives students an opportunity to think through what has been said, challenge the existing information, formulate additional queries or alternative suggestions before their teacher responds. By giving students a few seconds to reflect on what has been said or asked and formulate their responses, teachers create a classroom environment that fosters active engagement, encourages creativity, and enhances comprehension. This approach enables the learners to analyze, synthesize, and evaluate information, which are essential skills required in social studies courses (Michalsky et al., 2017).

The challenge associated with waiting time in discussions lies in its potential to disrupt the natural flow of conversation and hinder effective communication. Extended pauses or delays in responses may result in disengagement, loss of momentum, and a reduction in overall efficiency when exchanging ideas or information. This very same problem confronts professors and students who are taking up Bachelor of Secondary Education, Major in Social Studies at the City University of Muntinlupa. In particular, during online learning, professors have noticed that students frequently respond superficially to questions posed in class or do not participate at all. They have also observed that there is a noticeable difference in performance between students who process information quickly and those who need more time, with some students consistently dominating discussions while others stay silent, highlighting a disparity in engagement and participation. During face-to-face lessons, professors noticed that students provide incomplete or incorrect responses when given a very short time to process questions, particularly on problems involving higher order thinking.

This study explored wait-time as an approach to strengthen student's engagement and thinking processes. Through this approach of thoughtful response waiting periods, educators are able to create classrooms which stimulate thinking processes where learners reconsider traditional solutions while critically considering new possibilities. The intentional pauses also provide students with safe space to challenge other ideas and present possible alternative perspectives, which can lead to more inclusive learning and diverse learning experiences. Wait-time further helps teachers to assess students' understanding of the given concepts and identify areas that need further attention (Van Booven, 2007). As a result, quality engagement and learning will be enhanced as wait-time allows for deeper exploration on topics covered in Social Studies class documents and texts being discussed thus, allowing gaps from regular instruction to be filled. Additionally, wait-time offers formative

assessment opportunities as it supports self-regulated behavior among children paving way for motivation enhancement since there is room for decreased levels of judgmental analysis when compared to classroom testing (Tsiourvas, 2015). In terms of motivation, wait-time can build students' confidence and autonomy, as they have the chance to reflect on their metacognition and participate more actively in classroom discussions (McArthur, 2023).

Seasoned teachers regularly capitalize on wait-time to provide opportunities for learners to deeply absorb, analyze, and formulate necessary answers to the question at hand (Yeh, 2008). Though asking a question and waiting for an answer sounds simple, it is difficult to effectively implement until everyone involved has practiced it and developed respect for the lag period. Initially, wait-time seems to be a waste of precious time (William, 2007). The overall impact of waiting is far more supportive of learning than a headlong rush into rapid fire responses.

Most of the teachers, particularly the neophytes, will ask a question on how long should one wait? ("Your Secret Weapon: Wait Time," 2015) argued that it depends on the difficulty of the question, students' abilities, and the clarity of the questions asked. The National Council of Teachers of English (2022) found that knowledge-based and lower-level recall questions can typically be answered within 1-3 seconds. In contrast, questions requiring calculation, particularly in Mathematics and Sciences, often take 4-6 seconds, while higher-order thinking skills (HOTS) questions needing more thoughtful or divergent responses generally require 6-10 seconds. Although Rowe claimed that when teachers make use of wait-time and there were positive changes manifested in the classroom, it is insufficient to say that it helped the students to develop critical thinking due to unavailable data to support the claim. The changes that Rowe claimed was inconclusive and a bit vague to wit:

"There are increases in the length of the response, the number of unsolicited appropriate responses, student confidence,

incidence of speculative responses, incidence of child-child data comparisons, incidence of evidence-inference statements, frequency of student questions, and incidence of responses from "relatively slow" students. The number of teacher questions which do not elicit a response decreases." (Rowe, 1974; as cited in Audet & Tobin, 1984).

A 1994 study by Robert Stahl validated the previous results and proposed that the phrase "think-time" more accurately portrays what happens within the 3-5 second pause. The additional time waiting ultimately encourages students to think about the question, and their resulting answer. McCarthy (2018), an education consultant, explains that waiting is in line with the needs of both individuals and external thinkers. When people think aloud, they're going to have to fully consider what their responses are before speaking, while thinking internally gives them enough time to feel confident to speak. Without the needed waiting-time, answer exchange remained superficial, according to research conducted by Nystrand, 1997: "Almost all teachers' questions, furthermore, required students to recall what someone else thought, rather than to articulate, examine, elaborate, or review what they themselves thought (TeacherVision, 2015). Tobin (1984) concludes that "wait time" in and of itself does not insure critical thinking. A curriculum which provides students with the opportunity to develop thinking skills must be in place. Interestingly, Tobin found that high achievers consistently were permitted more wait time than were less skilled students, indicating that teachers need to monitor and evaluate their own behavior while using such strategies. Previous studies were concentrated in the field of science and mathematics (Takayoshi, et al., 2018). This study will explore how wait-time can be effectively utilized in Social Studies courses and its impact on students' cognitive process, thinking and re-thinking.

At the onset of the pandemic, a common argument is that online schooling does not provide equal or advanced learning compared to face-to-face classes. Langmead (2022)

claimed that online schools have provided more meaningful means to create learning. While many experts and studies agreed that there were lesser authentic interactions during synchronous and asynchronous sessions than face to face delivery, the set-up provided balance that opened doors for the students to become more independent in terms of problem solving and decision making and participating in virtual groups and teams (The Cult of Pedagogy, n.d.). Studies show that small shifts in teaching schedules can make all the difference academically – one of these being the concept of "wait time," which fits naturally into the online learning format (Stahl, et al., 2009).

In the light of the above-mentioned circumstances, the authors would like to find out how wait-time increases students' quality engagement and helps them improve their thinking and re-thinking processes both in online and face-to-face classes and what "Wait-Time Model" could be proposed based on the results of the study.

Statement of the Problem. This research seeks to find out how wait-time can affect the students' classroom engagement and their thinking and re-thinking processes in Social Studies Courses. Specifically, this research aimed to respond to the following questions:

1. What is the average wait-time (think-time) in every type of question that teachers provide to the students during online and/or face-to-face classes?
2. How does the wait-time (think-time) help students to be actively engaged in classroom discussions?
3. Is there a significant relationship between average length of wait-time and classroom engagement during online classes and/or Face-to-face?
4. Is there a significant relationship between length of wait-time and thinking and rethinking process during online and/or face-to-face classes?
5. What wait-time model or framework can be proposed based on the results of this study?

METHODOLOGY

This study employed descriptive-correlation research to describe the relationship between the average wait-time (think-time) and classroom engagement during online and/or face-to-face classes. This method is used to examine the interplay between wait-time and engagement as it allows the researchers to capture the natural dynamics in both online and face-to-face educational settings. Through purposive sampling, the selected participants in this study are composed of three (3) sections of Bachelor of Secondary Education majoring in Social Studies: Section 2E (N=26); Section 3E (N=35), and Section 4E (N=39). A total of 100 respondents from the College of Teacher Education at Pamantasan ng Lungsod ng Muntinlupa. The Researcher-Made Survey Questionnaires on the "Average Teacher's Wait-time Tool" and "Classroom Discussion through a Wait-time Tool" are used in the gathering of data. These survey tools were specifically designed by the authors and were validated by the experts in the field of teaching. In analyzing the data, this study used Frequency Distribution, Weighted Mean, Standard Deviation, Pearson *r*, and the Ranking.

RESULTS AND DISCUSSION

Table 1

Average Wait-Time (Think-Time) in every Type of Question that Teachers Provide to the Students during Online and/or Face-to-Face Classes

Revised Bloom's Taxonomy of Cognitive Domains	Average Wait-time	Rank	Revised Bloom's Taxonomy of Cognitive Domains	Average Wait-time	Rank
Creating Questions	2 mins & 11 secs	1	Creating Questions	2 mins & 11 secs	1
Evaluating Questions	1 min & 38 secs	2	Evaluating Questions	1 min & 38 secs	2
Analyzing Questions	1 min & 35 secs	3	Analyzing Questions	1 min & 35 secs	3
Applying Questions	1 min & 14 secs	4	Applying Questions	1 min & 14 secs	4

In Table 1, the average wait-time for Creating Questions is 2 minutes and 11 seconds (Rank 1), Evaluating Questions is 1 minute and 38 seconds (Rank 2), Analyzing Questions is 1 minute and 35 seconds (Rank 3), Applying Questions is 1 minute and 14 seconds (Rank 4), Understanding Questions is 1 minute and 7 seconds (Rank 5), and Remembering Question

is 41 seconds (Rank 1). The data indicated different average wait-times for various categories of questions, along with their respective rankings. The data above suggested that the highest average wait-time observed for "Creating Questions" with an average duration of 2 minutes and 11 seconds. This extended period indicates that instructors or discussion facilitators are allowing ample time for students to think and formulate their responses when asked to generate their own questions. The longer think-time is likely due to the nature of creative thinking and question generation, which often require more reflection and idea development.

"Evaluating Questions" ranks second, with an average wait-time of 1 minute and 38 seconds. This substantial amount of time allows students to critically assess and analyze the questions before providing their evaluations or judgments. Both "Evaluating" and "Creating" questions necessitate higher-order thinking skills, such as critical thinking, analysis, and synthesis. The wait-time provided for these types of questions enables students to engage in deep cognitive processing and form well-considered responses, aligning with Mary Budd Rowe's concept of "wait-time," which emphasizes the importance of giving students more time to think before responding (Rowe, 1974).

"Analyzing Questions" has the third-longest average wait-time of 1 minute and 35 seconds, followed by "Applying Questions" at 1 minute and 14 seconds. This pattern continues with "Understanding Questions" at 1 minute and 7 seconds, and "Remembering Questions," which have the shortest wait-time at 41 seconds. The progressively shorter wait-times correspond to the cognitive demands of the questions, with higher-order thinking questions requiring more time for deep analysis and reflection, while straightforward, factual questions demand less time for retrieval and response (Hattie et al., 2019).

The ranking and durations of average wait-times reflect the perceived cognitive demand or complexity of the question types. Questions that require higher-order thinking, such as creating,

evaluating, and analyzing, have longer wait-times to allow for deeper cognitive processing (Alber, 1997). In contrast, questions focused on remembering information have shorter wait-times as they typically involve factual recall. The data underscore the importance of adjusting wait-times to match the cognitive demands of the tasks, promoting meaningful and thoughtful student engagement.

Table 2
Mean Distribution of Wait Time to Help Students Engage in Classroom Discussions

Aspects/Skills honed through Wait-time Utilization	Weighted Mean	Verbal Interpretation	Rank
Active Listening	4.23	Strongly Agree	5.5
Voluntary Participation	4.01	Strongly Agree	12
Thoughtful Contributions	4.22	Strongly Agree	8
Respectful Communication	4.16	Strongly Agree	10.5
Informed Responses	4.25	Strongly Agree	3.5
Feedback and Reflection	4.22	Strongly Agree	8
Diverse Perspective Sharing	4.23	Strongly Agree	5.5
Sustained Engagement	4.16	Strongly Agree	10.5
Interest and Enthusiasm	4.25	Strongly Agree	3.5
Alignment with Learning Goals	4.22	Strongly Agree	8
Relevance	4.26	Strongly Agree	2
Effective Communication Skills.	4.32	Strongly Agree	1
Mean	4.21	Strongly Agree	

Table 2 shows how students and professors assessed the importance of wait-time in classroom engagement. Data suggest that wait-time significantly enhances active listening, as students have ample time to process their peers' contributions, promoting a more engaged classroom environment. It also fosters thoughtful contributions by allowing students to reflect on their ideas before sharing, thus ensuring more meaningful participation. Furthermore, wait-time facilitates respectful communication by enabling students to listen attentively and respond considerately. It supports informed responses by giving students time to recall and apply their knowledge accurately. Incorporating wait-time also encourages diverse perspective sharing, as students can contemplate various viewpoints, thereby enriching classroom discussions. This practice aligns with the concept of promoting deeper cognitive engagement and reflection, essential for effective learning.

Additionally, wait-time contributes to sustained engagement and reduces rushed or disengaged responses, thereby maintaining students' focus on discussions. It nurtures interest and enthusiasm by allowing students to delve deeper into the subject matter, which is reflected in their contributions. This strategy aids in aligning responses with learning goals, ensuring that students' input is relevant and directly related to the topic at hand. Moreover, wait-time improves effective communication skills by allowing students to organize their thoughts and express themselves clearly. Collectively, these benefits suggest that wait-time is a valuable tool in enhancing various aspects of classroom dynamics, ultimately fostering a more supportive and intellectually stimulating learning environment.

The research findings underscore the significance of wait-time as an invaluable tool for fostering active student engagement in classroom discussions. By incorporating deliberate pauses in teacher-student interactions, students are provided with the time and space necessary to refine their communication skills. This deliberate delay encourages students to respond in a more relevant and informative manner, express genuine interest and enthusiasm, actively listen to their peers, and contribute thoughtful perspectives to the discussion. Furthermore, the implementation of wait-time in classroom discourse promotes reflection on the material, aligns with learning goals, facilitates respectful communication, and sustains overall engagement. While the study indicates that wait-time may not directly influence the voluntary nature of student participation, it creates an environment conducive to students willingly and confidently contributing to class discussions. This research highlights the multifaceted benefits of integrating wait-time strategies in educational settings, ultimately enhancing the quality of student involvement and the overall dynamics of classroom interactions.

Table 3
Relationship Between Average Length of Wait-Time and Active Classroom Engagement During Online Classes and/or Face-to-Face

Pearson r	Correlation Coefficient	Interpretation
Average Length of Wait-time and Active Classroom Engagement	0.90	Positive Correlation
Length of Wait-time and Thinking and Rethinking Process	-0.57	Moderate Negative Correlation

Pearson-r was run to determine the relationship between average length of wait-time and active classroom engagement during online classes and/or Face-to-face with a result of 0.90 which is a positive correlation. A correlation coefficient of 0.90 indicates a very strong and positive relationship between the average length of wait-time and active classroom engagement during both online classes and face-to-face sessions. In this context, "Positive correlation" means that as the average length of wait-time increases, active classroom engagement also increases. In other words, when instructors provide more time for students to think, process information, and engage, students tend to be more actively involved in the class. The value of 0.90 is quite close to 1, which is the maximum value for a positive correlation. This suggests that there is a nearly perfect positive relationship between wait-time and active classroom engagement. The closer the correlation coefficient is to 1, the stronger the relationship. In practical terms, this means that instructors who incorporate longer wait-times into their teaching approach, whether in online or face-to-face classes, are likely to experience a substantial increase in student engagement. Allowing students more time to think, respond, and participate actively can positively impact their learning experience and overall engagement in the classroom.

On the other hand, the study also explored the relationship between the length of wait-time in both online and face-to-face classes and the thinking and rethinking process. The correlation coefficient of -0.57 indicates a moderate negative correlation, implying that as wait-time

increases, the thinking and rethinking process tends to decrease, and vice versa. This suggests an inverse relationship, where longer wait-times may result in students engaging less in cognitive processing. The findings caution that while extended wait-times offer students more time for reflection, it does not necessarily lead to deeper thinking. Instructors need to strike a balance in wait-time duration to encourage meaningful thinking without causing disengagement (Cavanagh, et.al.,2011). The optimal wait-time duration varies based on context and student needs (Berger, et.al,2012). Conclusion. This study emphasizes the crucial role of wait-time in education, revealing its substantial impact on student engagement and learning outcomes. Students derive significant benefits from extended wait-times, fostering deeper understanding and effective problem-solving; however, a moderate negative correlation with the thinking process necessitates a delicate balance. In a nutshell, the study underscores the importance of balancing wait-time for an effective and engaging learning environment, with potential benefits extending to students, teachers, and the broader academic community.

Recommendations. It is recommended that students embrace wait-time as an opportunity for profound engagement and understanding that longer intervals do not inherently diminish thinking but rather depend on how the time is utilized. For teachers, strategic use of wait-time proves to positively influence knowledge consolidation, yet caution is advised against overextension, advocating for a mix of short and extended intervals. Academic councils are urged to incorporate wait-time strategies into faculty development, encourage research on optimal durations, and consider it in evaluating teaching effectiveness. The university community is encouraged to foster an inclusive culture recognizing the significance of wait-time, supporting faculty in refining practices. At the city level, the study proposes integrating effective wait-time practices in local schools and investing in teacher professional development. Lastly, future researchers are urged to explore the complex and context-dependent relationship between wait-time and

learning outcomes, considering diverse educational settings, cultural nuances, and technological influences.

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INTEGRATED HYBRID WAIT-TIME MODEL (WTM)

Introduction. An Integrated Hybrid Wait-time Model was developed based on the findings of the research entitled “Optimizing Quality Classroom Engagement and Thinking and Rethinking Processes in Social Studies Courses through a Wait-time Model (WTM).” Based on the findings, a Hybrid Wait-time Model could be implemented to optimize engagement and thinking/rethinking processes in both online and face-to-face classes. This model would incorporate the following types, and key characteristics:

TYPES OF ITW-MODEL	ITW MODEL KEY CHARACTERISTICS	APPROACHES
DIFFERENTIATED WAIT-TIME	Longer Wait-Time (5-7 Seconds)	Applied for direct questions requiring recall, comprehension, or single-step application of knowledge to encourage active engagement and participation. <i>(Aligned with the positive correlation between wait-time and engagement.)</i>
	Shorter Wait-Time (2-3 Seconds)	Employed for probing questions or open-ended prompts that encourage deeper thinking and rethinking. <i>(Balancing the negative correlation between wait-time and the thinking/rethinking process)</i>
BALANCE AND ADAPTIVE WAIT-TIME	Dynamic Adjustment	- Wait-times dynamically adjusted based on student responses, engagement cues, and question complexity for personalized learning. - Utilize nonverbal cues, such as eye contact and facial expressions, to assess student understanding and adjust wait-time accordingly.
EXPLICIT WAIT-TIME EXPECTATIONS	Communication and Instructions	- Inform students about the purpose of wait-time and explain how it benefits their learning. - Provide clear instructions on how students should respond during wait-time to promote deeper engagement.
TECHNOLOGY INTEGRATION	Utilization of Online Tools	- Incorporate online tools and platforms for wait-time management, including online polls, collaborative documents, and response time trackers. - Implement interactive activities and prompts to encourage student participation and reflection during wait-time.
REGULAR OBSERVATION	N/A	- Regularly observe student engagement and participation during wait-time. - Collect and analyze data on student responses and thinking/rethinking processes to adjust the wait-time model as needed.
INTEGRATED HYBRID MODEL BENEFITS		- Increased student engagement and participation. - Improved critical thinking and problem-solving skills. - Enhanced student confidence and self-efficacy. - More equitable learning opportunities for all students. - Reduced cognitive overload and anxiety.
IMPLEMENTATION CONSIDERATIONS		- Professional development for instructors on effective implementation. - Clear communication and collaboration channels between instructors and students. - Ensure necessary technology infrastructure and resources. - Develop a system for monitoring and evaluating model effectiveness with adjustments as needed.

The Integrated Hybrid Wait-time Model promotes active participation, critical thinking, and deeper understanding among students by combining differentiated wait-times and adaptive strategies. This comprehensive approach optimizes engagement and cognitive processing in both online and face-to-face classes.

PARTS	PROCESSING
Initial Engagement Phase	- Begin with a brief period of initial engagement where the instructor poses a question or presents a topic. - Provide a short wait-time to encourage immediate responses, promoting active participation and quick engagement. - Follow the initial engagement with a think-pair-share or group discussion phase.
Think-Pair-Share or Group Discussion	- During pair or group discussions, allow students more extended wait-time, enabling them to think and discuss with peers. - Encourage in-depth consideration of the topic and thoughtful responses within groups. - After the group discussion phase, reconvene the whole class for sharing.
Whole-Class Sharing	- Here, adjust the wait-time based on the nature of the question or topic: - For factual or recall questions, provide shorter wait-times to promote quick responses. - For open-ended or conceptually challenging questions, extend the wait-time to encourage deeper thinking and reflection.
Feedback and Reflection	- Incorporate a feedback and reflection phase where students receive feedback on their responses. - Allow additional wait-time for students to process feedback and reflect on their understanding. - Encourage students to revise and refine their answers based on feedback.
Independent Processing	- Include time for independent processing of the topic. - During independent work, students can have more control over their wait-time as they think, write, or research individually.
Closure and Summary	- Conclude the class with a closure and summary phase. - Here, the instructor can provide a summary of the key points and encourage students to share any final thoughts or questions.

Note: Adapt wait-times based on student engagement and contributions, utilizing a flexible model that recognizes the diverse needs of different class phases. This approach supports student engagement and the cognitive process, providing opportunities for immediate interaction, in-depth reflection, and independent processing while maintaining an engaging learning environment. Instructors can fine-tune wait-times within each phase to align with specific learning objectives and content complexity, enhancing the effectiveness of their teaching approach.