Shifting Session and the Performance of Grade 8 TLE Students as Mediated by Student Engagement

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.906000155

Received: 28 May 2025; Accepted: 02 June 2025; Published: 04 July 2025

ABSTRACT

This study examined the relationship between students' perceptions of double-shift schooling session factors (classroom atmosphere, student behavior, teacher factor), engagement levels, and performance in Technology and Livelihood Education (TLE). The objective was to determine whether students' engagement mediates the relationship between their perceptions of double-shift factors and academic performance. A quantitative descriptive correlational method was employed using survey instruments and post-test performance assessments across four cognitive domains (Remembering, Understanding, Applying, and Analyzing). Findings revealed significant positive correlations between students' perceptions and engagement and between perceptions and performance in specific domains, particularly in "Applying ."However, the data showed no consistent or significant correlation between engagement and all performance domains, with only "Applying" showing a statistically significant link ($r=.236$, $p<0.05$); this result limits the potential for mediation. As such, the study concludes the students' engagement does not mediate the relationship between their perceptions of double-shift session factors and performance, as the conditions for mediation (i.e., significant relationships among all three variables) were not fully met. The findings underscore the impact of negative student perceptions under double-shift schooling on engagement and performance, particularly in application-based tasks. These results highlight the need to improve school conditions, instructional time, and teacher support to foster better student outcomes in constrained educational systems.

Keywords: Double-shift session; Cognitive skills; Student engagement; Student performance; Students performance

INTRODUCTION

Shifting sessions in public schools were introduced mainly due to lacking physical facilities and personnel. DepEd Order No. 62, s. 2004, titled "Adoption of Double Shift Policy in Public Schools to Address Classroom Shortage," was issued by the Department of Education (DepEd) on December 13, 2004. This policy was introduced to systematically and cost-effectively address the persistent problem of inadequate classrooms resulting from annual increases in enrollment and severe budget constraints. Although this model can provide better student capacity, it also creates issues, like loss of instructional time and possible inconvenience in student's daily schedules. Such factors can impact the student's performance, representing a key factor for successful learning. The double-shift system is a teaching strategy for schools where there are two groups of students in the same school premises but at different times; one group goes to school in the morning until midday while the second attend lessons in the afternoon. The persistent problems of overcrowding and limited resources faced by schools have been solved this way, and more students are being served. In the Philippine context of education delivery and provision, and more so in public schools, multishift or double-shift class schedule was a typical response to the inadequacy of both classrooms and the teaching force. This routine change disrupts students' daily structure, which might affect study time, concentration, and academic accomplishment; this is very important, particularly in a field such as Technology and Livelihood Education (TLE), as this requires enough time for instruction both in theories and practical. This research study examines the relationship between students' perception of shifting sessions in terms of classroom atmosphere, student behavior, and teacher factors relating to student performance and student engagement.

According to Bray (2008), students' perceptions of fairness, engagement, and teacher support in a double-shift system can mitigate limitations in time and resources and improve learning performance, especially in applied tasks, which is supported by Schunk & DiBenedetto (2020) according to his self-efficacy, often shaped by students' perception of their school context directly influences how they tackle real-word or application-based tasks. Bandura (1986) explains that behavior (like applying knowledge) is shaped by reciprocal interactions between personal factors, environmental influences, and behaviors. Thus, students who perceive a positive atmosphere, cooperative peers, and effective teachers are more likely to demonstrate competence in applied tasks.

Based on the research by Reyes et al. (2012) found that student engagement fully mediated the relationship between classroom emotional climate and academic performance, underscoring the crucial role of engagement in translating environmental factors into academic success. Barret et al. (2015) demonstrated that learning environments significantly influence student engagement and performance. A poor classroom atmosphere common in double-shift systems due to overcrowding, limited space, and rushed sessions can negatively affect focus, comfort, and willingness to participate.

As demonstrated by the research of Marzano (2003), positive student behavior is both a product and a determinant of intense engagement in learning. Supporting this perspective, Montero et al. (2021) found that classroom climate mediates the relationship between peer victimization and aggression, suggesting that a supportive environment can reduce behaviors by fostering greater engagement. Under double-shift, behavior issues such as fatigue, irritability, or lack of discipline may increase due to time constraints and disrupted routines.

As characterized by the study of Hattie (2009), teacher effectiveness is one of the strongest predictors of student engagement and learning success. Building on this, Liu (2024) found that positive teacher-student relationships enhance engagement both directly and indirectly by increasing social support and reducing academic pressure. Teaching quality, preparedness, and adaptability are often strained in double-shift settings due to increased workloads and limited preparation time.

The study is focused on the impact of double-shift sessions on the performance of Grade 8 students, with student engagement as a mediating factor. It aimed to understand how the structure of the double-shift schooling system influences academic outcomes, particularly in the context of Grade 8 Technology and Livelihood Education (TLE). This research explored relationships among three key variables: students' perceptions of double-shift sessions, their level of engagement in school, and their academic performance in the TLE subject.

Conducted with 100 Grade 8 students enrolled in the Exploratory Course at Quezon National High School in Lucena City, Quezon Province, the study examined how students perceive the quality of the classroom environment, peer behavior, and teacher-related factors within the double-shift arrangement. These perceptions were analyzed to assess their impact on student engagement, measured through indicators such as participation, motivation, and interaction, and ultimately on academic performance across the four cognitive domains of Bloom's Taxonomy: Remembering, Understanding, Applying, and Analyzing.

By specifically focusing on the Grade 8 curriculum, which combines both theoretical and practical learning components, the study provided valuable insights into how the limitations of the double-shift system—such as reduced instructional time, limited resources, and less individualized attention—can hinder students' ability to engage and perform well, particularly in skill-based tasks that require hands-on learning. This targeted approach allowed the researchers to capture TLE students' nuanced challenges and experiences in a resource-constrained, time-restricted educational setting.

METHODOLOGY

Research Design

This research study aimed to ascertain the relationship between three key variables: shifting sessions, student

performance (in TLE), and student engagement. A quantitative descriptive correlational method was employed using survey instruments and post-test performance assessments across four cognitive domains (Remembering, Understanding, Applying, and Analyzing). The research design was deemed ideal because it allowed for systematically investigating the relationships using measurable data and statistical analysis. (Creswell & Creswell, 2018)

Participants and Sampling Technique

No sampling technique was applied because the number of students in the morning and afternoon sessions comprised the total respondents of the study. There were fifty (50) students in each session. This study utilized a census approach by including all students from both sessions, ensuring that every student's perception, engagement level, and academic performance within the shifting sessions were fully represented. This comprehensive inclusion eliminates sampling bias and allows for more accurate and generalizable findings within the context of Quezon National High School's Grade 8 TLE program (Creswell & Creswell, 2018).

Research Instrument

The study utilized different instruments and the demographic profile of the student-respondents. The second and third parts aimed to determine the respondents' perception and engagement of the double-shift schooling system. The questionnaire was written in English and answered by numeric method from 1 to 5 based on the Likert rating scale. It was reviewed and approved by members of the panel. For performance, the questionnaire was validated by TLE teachers from Lucena who were knowledgeable in the nail care subject.

Data Gathering Procedure

The researcher has undergone a systematic gathering of data from the initial to the ultimate procedure of how this research is facilitated. Initially, a letter of intent consenting to the researcher conducting a research activity for participants under the given locale is emphasized and sought approval from the school principal. Once approved, the researcher communicated with the respondents for the distribution and retrieval of survey tools used for getting their opinions and attitudes towards the subject matter. Strict adherence to ethical standards was maintained throughout the process, including confidentiality, voluntary participation and privacy. The collected data was checked and tabulated for quantitative and statistical analysis.

Data Analysis Procedure

The researcher utilized Quantitative data collection methods, which are essential for gathering numerical information that can be analyzed statistically. These methods are instrumental when researchers aim to quantify behaviors, opinions, or other defined variables.

Ethical Considerations

At every step of the research procedure, the researcher ensured the ethical guidelines were followed correctly. Teachers and school administrators received a thorough explanation of the inquest's goals. The letter informed teachers and school administrators of their duty to ensure the study's success. The gathered questionnaires were handled appropriately to protect the respondents' identities and ensure the confidentiality of the material.

RESULTS AND DISCUSSION

Respondents Perception on Classroom Atmosphere

The overall mean score (2.38) falls within the "Disagree," which suggests a generally negative perception of the impact of the double-shift schooling system on the classroom atmosphere. However, a relatively low strand deviation (0.57) indicates that the responses were consistent, suggesting shared negative perceptions among the respondents (see Table 1).

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue VI June 2025

Table 1. Respondents Perception on Classroom Atmosphere

Indicators	Mean	SD	VI
In terms of classroom atmosphere during the double shift session, I……			
1. feel actively engaged in classroom activities during the double shift sessions.	2.49	0.95	MA
2. participate effectively in class discussions.	2.28	0.94	D
3. find it challenging to actively participate in classroom activities during the double shift sessions.	2.52	1.03	MA
4. have enough opportunities to ask questions and seek clarification.	2.58	1.03	MA
5. feel motivated to actively participate in classroom activities during the double shift sessions.	2.23	0.89	D
6. facilitate collaborative learning and group discussions within the double-shift schooling system.	2.44	1.06	D
7. feel that my opinions and ideas are valued during the double shift sessions.	2.46	0.99	D
8. experience a conducive environment for active learning and participation in the double-shift schooling system	2.23	1.03	D
9. promote active engagement and participation among students.	2.30	0.94	D
10. believe that the double-shift schooling system positively impacts my engagement and participation in the classroom.	2.29	1.14	D
Overall	**2.38**	**0.57**	**D**

Legend: 4.50-5.00 (Strongly Agree) 3.50-4.49 (Agree) 2.50-3.49 (Moderately Agree) 1.50-2.49 (Disagree) 1.00-1.49 (Strongly Disagree)

Double-shift schooling often results in compressed instructional time, overburdened teachers, and limited classroom resources, undermining the learning environment. In such settings, students usually experience a rushed instructional pace, limited teacher interaction, and minimal opportunities for collaboration or reflective learning. These conditions affect the development of a positive classroom atmosphere. In crowded, fast-paced school settings like double-shift systems, students may feel less heard and less motivated to participate, which affects their emotional and academic engagement, Fredericks, J. A., Blumenfeld, P.C., & Paris, A. H., (2004). The lack of students' voice and participation was evident in the low mean scores related to motivation, participation in class discussion, and perceived value of student opinions in the study. Further reinforcing their perspective, Deci and Ryan's (2000) Self-Determination Theory suggests that when students perceive their learning environment as overly rigid, their intrinsic motivation and engagement decline. The psychological needs for autonomy, competence, and relatedness are often unmet in double-shift contexts, contributing to diminished enthusiasm for learning and decreased classroom involvement.

While most results fall under the disagreeable range, some students moderately agree that they are engaged and can ask questions in the double-shift system. They experience moments of engagement depending on individual motivation, teacher strategies, or subject matter interest. Bruns et al. (2003) argue that student engagement can be maintained even in constrained systems if teachers are well-trained and use participatory teaching methods. UNESCO (2000) emphasizes the role of learner-centered approaches in maintaining engagement even in less-than-ideal instructional settings like double-shift systems. Indicator 2 in Table 1 reflects the reality of time constraints and reduced energy levels in the double-shift system. Students may struggle with fatigue or have limited time to process content, making active participation difficult yet not impossible. According to Bray

(2008), compressed time in double-shift systems often leads to a rushed learning pace, reducing student participation in discussions or deeper engagement. Indicator 3 shows that although time is limited, some teachers deliberate to ensure students can ask questions and seek help. Moderately agreeing indicates that this support may not be consistently applied across all subjects or teachers. According to Dale et al. (2021), good teaching practice, even under time constraints, can preserve opportunities for clarification if teachers plan well and prioritize engagement. Bonner & Addams (2012) emphasize that teacher responsiveness can counteract some adverse effects of shortened instructional time in double-shift schools, helping maintain a positive atmosphere for questioning.

Respondents Perception on Student Behavior

Table 2 presents a survey result conducted to analyze students' behavior; 2.18 was obtained as the mean score in the category of "Disagree" according to the double-shift schooling. This score indicates that, in general, students have a negative view of the influence of the double-shift model on their behavior. The deflection of "Disagree" responses on multiple items highlights how students tend to feel similarly that this schooling format is detrimental to their motivation, participation, engagement, and adherence to behavioral expectations (see Table 2).

Table 2 Respondents Perception on Student Behavior

Indicators	**Mean**	**SD**	**VI**
In terms of student behavior during the double shift session, I……..			
1. engage in discussions and group activities during the double shift sessions.	2.24	1.07	D
2. ask questions and seek clarification during the double shift sessions.	2.30	1.10	D
3. contribute my ideas and opinions during class discussions in the double shift sessions.	2.15	1.06	D
4. actively listen to the teacher and my peers during the double shift sessions.	2.15	1.18	D
5. am motivated to learn and actively engage in the double shift sessions.	2.23	1.01	D
6. follow classroom rules and guidelines during the double shift sessions.	1.91	1.50	D
7. feel that my opinions and ideas are valued during the double shift sessions.	2.40	1.02	D
8. am responsible for completing my assignments and tasks in the double sessions.	2.22	0.97	D
9. take responsibility for my own learning and progress in the double sessions.	2.27	1.11	D
10. believe that my behavior and engagement are positively influenced by the double shift sessions.	1.95	1.12	D
Overall	**2.18**	**0.70**	**D**

Legend: 4.50-5.00 (Strongly Agree) 3.50-4.49 (Agree) 2.50-3.49 (Moderately Agree) 1.50-2.49 (Disagree) 1.00-1.49 (Strongly Disagree)

These results are consistent with Ore Areche (2022) and report a high positive correlation between students' attitudes and learning behavior. When students are eager to do well in school, feel competent in the academic environment, and are curious about what's being taught, they are more likely to engage in positive behavior conducive to academic success—studying hard, paying attention, participating, and following the rules. However, favorable attitudes are not easy to create in a double-shift school. Switching between shifts also frequently disrupts routines, and there is little ambiguity in the numbers: uncertainty caused by scheduling changes leaves students less confident of their standing and work schedule, and stability has been shown to increase both mental health and productivity. This instability threatens to undermine students' sense of

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue VI June 2025

possession and connection to their environment, reducing engagement levels.

Mulkeen (2009) also notes that the disjointed structure of double-shift systems is a key barrier to behavior management. There, the shortened school day doesn't allow for as much of the time teachers need to create a cohesive class culture and have classroom expectations that are clear from class to class. When student-teacher relationships and shared standards of behavior in a classroom aren't strong, the process of managing behavior shifts from being proactive to reactive, which can mean fewer rules are followed and less engagement — two areas the survey turned up as particularly weak on the scorecards.

Supporting this, Emmer and Evertson (2013) suggest that the pattern and predictability of the classroom environment strongly influence student behavior. Safe and civilized schools, organized and supportive classrooms, and consistent environments where students feel welcomed foster a sense of security and belonging among students. The above conditions are essential if students manage themselves, work effectively with others, and remain engaged.

In summary, the low mean scores of Table 2 indicate systemic defects in double-shift schooling. These problems interfere with a student's ability to develop good behavior patterns and the creation of nurturing schools. Taken together, Areche, Mulkeen, and Emmer & Evertson's research helps us understand how vital classroom climate, routines, and teacher-student interactions influence students' behavior and general level of engagement. Their research indicates that when such components are weakened -as is frequently the case in double-shift systems-- students are less prone to developing good attitudes and more prone to becoming disaffected with learning.

Respondents Perception on Teacher Factor

The low overall mean score of (2.04) falls within the "Disagree" range, indicating a predominantly low score across all indicators, suggesting that the respondents largely disagree with the effectiveness of teachers within the double-shift system. While creating a positive and inclusive classroom environment received a slightly higher score, it's still within the "Disagree" range; this indicates potential issues with various aspects of teaching, including communication, subject matter expertise, feedback, and classroom management. The overall low mean score, as supported by the data, reflects the students' dissatisfaction with the quality of their learning environment (see Table 3).

Table 3 Respondents Perception on Teacher Factor

Indicators		**Mean**	**SD**	**VI**
1.	Effectively communicate the lesson objectives and expectations.	1.96	1.09	D
2.	Demonstrate a profound understanding of the subject matter.	2.04	1.02	D
3.	Provide clear explanations and instructions.	1.96	1.06	D
4.	Create a positive and inclusive classroom environment.	2.16	1.06	D
5.	Effectively manage classroom discipline and behavior.	1.99	1.08	D
6.	Use various teaching strategies to engage students.	2.14	1.14	D
7.	Provide timely and constructive feedback on student work.	2.03	1.07	D
8.	Encourage student participation and engagement.	2.16	1.10	D
9.	Approachable and supportive of student needs.	2.11	1.00	D
10.	Positively impacts student learning and engagement.	1.88	1.04	D
Overall		**2.04**	**0.71**	**D**

Legend: 4.50-5.00 (Strongly Agree) 3.50-4.49 (Agree) 2.50-3.49 (Moderately Agree) 1.50-2.49 (Disagree) 1.00-1.49 (Strongly Disagree)

As Bray (2008) and Mulkeen (2009) note, the logistical demands of double-shifting reduce instructional quality and limit teachers' ability to innovate, personalize, or even manage the classroom effectively. Furthermore, according to Fredricks et al. (2004), students are more likely to engage when teachers can maintain a clear structure, offer prompt feedback, and foster positive relationships, all of which are compromised under double-shift constraints. The consistently low score in Table 3 suggests that students perceive teachers in these settings as not adequately equipped or supported to meet these needs.

Respondents TLE Performance in terms of Remembering

The result suggests relatively widespread performance levels among TLE students regarding remembering. Most students (73%) achieved a "God" or better understanding in TLE. A significant portion (27%) scored in the "Good" range, suggesting a solid grasp of the material. While a smaller percentage (22%) achieved a "Fair" rating, only a small minority (5%) needed significant improvement. Overall, the data suggests a relatively high level of student understanding in the TLE subject.

Table 4 Respondents TLE Performance in terms of Remembering

Score Range	**f**	**%**	**VI**
9-10	22	22.0 **%**	Excellent
7-8	9	9.0 **%**	Very Good
5-6	30	30.0 **%**	Good
3-4	29	29.0 **%**	Fair
0-2	10	10.0 **%**	Need Improvement
TOTAL	100	100 %	

Legend: 4.50-5.00 (Strongly Agree) 3.50-4.49 (Agree) 2.50-3.49 (Moderately Agree) 1.50-2.49 (Disagree) 1.00-1.49 (Strongly Disagree)

According to Anderson and Krathwohl (2001), tasks at the "Remembering" level demand minimal cognitive processing and are often supported by practices such as drills and repetition. These strategies remain effective even when students are disengaged or experiencing time constraints. Lower-level tasks place fewer demands on working memory, allowing more students to perform successfully (Sweller, Ayres, & Kalyuga (2011). Students perform well in "Remembering" because it aligns with common instructional strategies (repetition and review), supporting successful recall; this is particularly relevant in structured subjects like TLE. Furthermore, Bray (2008) explains that in double-shift schools. However, instructional quality and student satisfaction may suffer, and performance on lower-order tasks remains relatively stable because such tasks do not require complex thinking or extended engagement; this helps explain why students may still excel at memorization and factual recall in TLE despite negative perceptions of their learning environment.

Respondents TLE Performance in terms of Understanding

The data reveals a relatively even distribution among the higher performance levels ("Excellent," "Very Good," and "Good), with a combined 73% of students achieving these grades. The "Fair" level accounts for (22%), suggesting a smaller group of students requiring additional support. Only a small percentage (5%) of students need significant improvement; this illustrates a strong overall performance in comprehension (a higher-order cognitive function per Bloom's Taxonomy) despite prevailing systematic constraints (see Table 5).

Table 5 Respondents TLE Performance in terms of Understanding

Score Range	**f**	**%**	**VI**
9-10	23	23.0 **%**	Excellent

7-8	23	23.0 **%**	Very Good
5-6	27	27.0 **%**	Good
3-4	22	22.0 **%**	Fair
0-2	5	5.0 %	Need Improvement
TOTAL	100	100 %	

Legend: 9-10 excellent, 7-8 Very good, 5-6 Good, 3-4-20 Fair, 0-2 Need improvement

According to Bandura's Cognitive Theory (1997), students with high self-efficacy can regulate motivation and behavior to meet academic goals, even under stress. Students develop a belief in their capabilities through mastery of hands-on tasks. This self-belief acts as an internal cognitive outcome, such as understanding.

Vygotsky's Sociocultural Theory (1978) suggests that learning is fundamentally social. In TLE (where students often work in groups), peer scaffolding can promote shared understanding. Peer support neutralizes the adverse effects of class disruptions by fostering collaborative problem-solving and shared responsibility for learning. Teachers often adjust their methods to fit time and space limitations. These adaptations (streamlined instructions, targeted formative assessments, and task-focused engagement) promote more explicit conceptualization. Piaget, L. (1952) asserts that students build meaningful understanding when instruction connects with their cognitive development; this suggests that skilled, adaptive teaching mediates the learning experience, not students' perceptions.

Respondents TLE Performance in terms of Applying

The distribution in Table 6 is more spread out than the “Understanding” category. A significant portion (58%) achieved “Good” or “Excellent” levels; a larger portion (42%) scored “Fair” or “Needs Improvement.” this suggests that while students demonstrate a reasonable level of understanding, their ability to apply that knowledge is less consistent. The consistent negative sentiment (low standard deviation of 0.57) indicates that many students hold this view, which can collectively impact their performance in the practical application of knowledge (see Table 6).

Table 6 Respondents TLE Performance in terms of Applying

Score Range	**f**	**%**	**VI**
9-10	22	22 %	Excellent
7-8	14	14 %	Very Good
5-6	22	22.0 %	Good
3-4	25	25.0 %	Fair
0-2	17	17.0 %	Need Improvement
TOTAL	100	100 %	

Legend: 9-10 excellent, 7-8 Very good, 5-6 Good, 3-4-20 Fair, 0-2 Need improvement

According to Bloom’s Taxonomy, applying goes beyond remembering or understanding (it requires students to transfer what they have learned into real-life practice), which is cognitively more demanding. Many students understand theories but fail in execution, especially in vocational subjects like TLE that require psychomotor and affective skills (Anderson & Krathwphl, 2001). TLE requires tools, materials, and time for students to practice tasks like cooking, sewing, electronics, or agriculture. These resources are insufficient in many schools, especially those under double-shift systems.

Schools lacking in equipment and materials for practical applications often fail to produce proficient students—

double-shifting limits instructional time. Less time means fewer hands-on sessions, less personalized feedback, and less opportunity to reflect and correct mistakes. This system often favors self-motivated students and independent learners (typically a small portion). Bray, M. (2008)

Respondents TLE Performance in terms of Analyzing

A combined 70% of students achieved Excellent + Very God + Good, demonstrating at least satisfactory performance in analyzing. However, 30% are below acceptable, with 19% categorized as fair and 11% needing improvement. Compared to the "Applying" category, the "Analyzing" category shows a smaller percentage of students needing improvement, suggesting that students find analyzing information easier than applying their knowledge in practical situations (see Table 7).

Table 7 Respondents TLE Performance in terms of Analyzing

Score Range	**f**	**%**	**VI**
9-10	28	28.0 %	Excellent
7-8	14	14.0 %	Very Good
5-6	28	28.0 %	Good
3-4	19	19.0 %	Fair
0-2	11	11.0 %	Need Improvement
TOTAL	100	100 %	

Legend: 9-10 excellent, 7-8 Very good, 5-6 Good, 3-4-20 Fair, 0-2 Need improvement

Higher-level cognitive skills are essential in vocational education. According to Bloom's Taxonomy (Anderson & Krathwool, 2001), "Analyzing" is a higher-order thinking skill crucial for problem-solving and decision-making in technical and livelihood subjects. According to (Deci and Ryan, 2000), people are motivated and perform best when they feel autonomous and competent. When they feel related, students may perform better at "Analyzing" than "Applying" because analyzing tasks tends to satisfy autonomy and competence needs more fully, fostering stronger intrinsic motivation and engagement. Analyzing tasks naturally fosters engagement, as they challenge students to think critically and deeply rather than follow a set of procedures, Fredricks et al. (2004).

Students Level of Engagement

The mean scores indicate students' perceptions of their engagement. The overall mean score of 2.26 falls under Slightly Engaged (SE). All 10 engagement indicators scored between 2.12 and 2.31, reflecting consistently low student involvement in learning activities, teacher interaction, extracurriculars, and class participation. The double-shift system divides school days into two shifts (morning and afternoon), often reducing instructional time, limited access to school facilities, and increased fatigue (see Table 8).

Table 8 Students Level of Engagement

Indicators	**Mean**	**SD**	**VI**
In terms of student engagement, I……. 1. actively participate in classroom activities during my assigned shift.	2.27	1.01	SE
2. can complete hands-on projects during my assigned shift.	2.27	1.07	SE
3. have ample opportunities to apply practical skills and knowledge during my assigned shift.	2.24	1.08	SE
4. develop resilience, adaptability, and perseverance in managing my academic schedule.	2.44	0.99	SE

5. have a positive and supportive relationship with my teachers during my assigned shift.	2.12	1.01	SE
6. have sufficient time and opportunities to participate in extracurricular activities in the double shift system	2.19	0.99	SE
7. receive personalized attention and support as an individual student.	2.21	1.03	SE
8. engage in various school events and initiatives to strengthen my connection to the school community.	2.29	1.00	SE
9. benefit from flexibility in scheduling which enhances my engagement as a student.	2.21	0.89	SE
10. find that it enhances my engagement and learning experiences.	2.31	1.09	SE
Overall	**2.26**	**0.64**	**SE**

Legend: 4.50-5.00 (Highly Engaged) 3.50-4.49 (Engaged) 2.50-3.49 (Moderately Engaged) 1.50-2.49 (Slightly Engaged) 1.00-1.49 (Not engaged)

According to GMR, E. (2015), students in double-shift systems often suffer from time pressure and diminished engagement due to rushed schedules and inadequate breaks; this is evident in low scores for project completion, participation, and extracurricular involvement. A crowded, noisy, or disorganized environment can hinder student focus and involvement. Poor physical conditions reduce opportunities for participation and collaboration. Fraser (2013) emphasizes that the classroom environment influences student motivation and engagement. Poor ventilation, lighting, or acoustics in double-shift schools are known to contribute to reduced student energy participation.

The lowest mean (2.12) reflects weak student-teacher relationships. In the double-shift system, teachers handle multiple groups daily with minimal personal interaction, limiting the ability to offer feedback, understand student needs, and create rapport. Hattie (2009) identified teacher-student relationships as one of the top factors in improving student achievement. Poor engagement often stems from a perceived emotional or academic disconnect with teachers. Eccles and Wigfield (2002) note that a student's self-perceived competence and interest are critical to engagement. If students internalize the belief that the system is not supportive, they disengage emotionally and academically.

Relationship Between Students' Perspectives on Double Shifting Session and Performance

Table 9 shows the correlation coefficients between students' perceptions of the double-shift schooling system, specifically their views on classroom atmosphere, student behavior, and teacher factors, and their performance in Technology and Livelihood Education (TLE) across four cognitive domains: Remembering, Understanding, Applying, and Analyzing. Classroom Atmosphere shows a positive correlation with "Applying" skills (r =.207*), a negative correlation with "Analyzing" (r = -0.207), and a negative correlation with "Remembering" (r = -0.178), which is not significant. A correlation coefficient of r =.207* indicates a weak but statistically significant positive relationship between classroom atmosphere and students' ability to apply knowledge (see Table 9).

Table 9 Relationship Between Students' Perspectives on Double Shifting Session and Performance

Perception on Double Shifting Sessions	**Performance in TLE**			
	Remembering	Understanding	Applying	Analyzing
Classroom Atmosphere	-.178	.119	.207*	-.207*
Student Behavior	-.069	.161	.211*	-.102
Teacher Factor	-.078	.218*	.218*	-.058

* Correlation is significant at the 0.05 level (2-tailed)

The table suggests that the student's perception of the school environment under the double-shift system has a measurable effect on their ability to apply what they have learned. According to Bray (2008), students' perceptions of fairness, engagement, and teacher support in a double-shift system can mitigate limitations in time and resources and improve learning performance, especially in applied tasks, which is supported by Schunk & DiBenedetto (2020) according to his self-efficacy, often shaped by students' perception of their school context directly influences how they tackle real-word or application-based tasks. Bandura (1986) explains that behavior (like applying knowledge) is shaped by reciprocal interactions between personal factors, environmental influences, and behaviors. Thus, students who perceive a positive atmosphere, cooperative peers, and effective teachers are more likely to demonstrate competence in applied tasks.

Student Behavior shows positive and significant correlations with "Applying" (r=.211*) but low and non-significant with other domains; this suggests that students' negative perception regarding the double-shift system has a measurable effect on their performance, particularly in application-based tasks, which due to a combination of environmental factors (like fatigue, limited and instructional time) and psychological impacts (such as reduced motivation and engagement). According to Eccles & Wigfield (2002), a perceived lack of fairness or quality in the double shift system can diminish intrinsic motivation, affecting how students participate and apply what they learn. The study of Khamis, A. & Sammons, P. (2004) found that inconsistent schedules and reduced learning time negatively affected students' academic achievement and engagement, especially in practical subjects requiring application knowledge.

Teacher Factor shows significant and positive correlations with "Understanding" (r=.218*) and "Applying" (r=.218*), suggesting teachers are influential in developing comprehension and practical application. Teachers foster the retention of knowledge and higher-order thinking, such as applying concepts in real-life contexts. Hattie (2009) emphasizes that teacher-student relationships, clarity of instruction, and expectations are among the strongest predictors of students' achievement. He identifies these as "hinge factors" that affect how students engage with and process academic content. Teacher influence becomes even more critical in a double-shift system, where instructional time is split and shortened. Students rely heavily on how effectively teachers manage time, deliver content, and connect with learners under compressed schedules. If the students perceive the teacher as unprepared or disengaged, their perception of the double-shift system worsens, leading to frustration and demotivation. According to Day et al. (2007), teachers' enthusiasm and emotional commitment to students significantly shape learners' attitudes toward school, particularly in challenging environments like shift-based schooling.

Relationship Between Students' Perspectives on Double Shifting Session and Engagement

The results in Table 9 confirm that students' perceptions of the double-shift factors are significantly related to their performance, particularly in more complex and skill-based domains like Understanding and Applying knowledge in TLE. The data supported the hypothesis and aligned with existing literature, showing how negative perceptions under double-shifting decrease engagement and performance.

Based on the data presented in Table 10, there appears to be a strong and statistically significant positive correlation between students' perceptions and engagement levels. These high correlation coefficients indicate that when students positively perceive the classroom atmosphere, peer behavior, and teacher support, their engagement levels significantly increase. Conversely, negative perceptions due to factors like fatigue, lack of resources, and shortened instructional time in these areas are strongly associated with low levels of engagement.

Table 10 Relationship Between Students' Perspectives on Double Shifting Session and Engagement.

Perception on Double Shifting Sessions	**Students' Engagement**
Classroom Atmosphere	.703**
Student Behavior	.776**
Teacher Factor	.776**

** Correlation is significant at the 0.01 level (2-tailed)

A poor classroom atmosphere, familiar with double-shift systems due to overcrowding, limited space, and rushed sessions can negatively affect focus, comfort, and willingness to participate. This is consistent with the findings from Barret et al. (2015), who argued that learning environments significantly influence student engagement and performance. Fredricks et al. (2004) emphasize that student engagement is heavily influenced by their perceptions of teacher support, peer behavior, and classroom environment.

Due to time constraints and disrupted routines, behavior issues such as fatigue, irritability, or lack of discipline may increase under double-shift systems. According to Marzano (2003), positive student behavior is both a product and a determinant of strong engagement in learning.

Teaching quality, preparedness, and adaptability are often strained in double-shift settings due to increased workloads and limited preparation time. As Hattie (2009) noted, teacher effectiveness is one of the strongest predictors of student engagement and learning success.

Based on the data from Table 10, it is evident that the student's perceptions of the double-shift session factors are significantly related to their engagement. All three factors, such as Classroom Atmosphere, Student Behavior, and Teacher factor, show strong statistically significant correlations with engagement. These findings strongly support the hypothesis and align with existing literature showing that negative perceptions of school structure and environment, such as those formed in double-shift systems, are closely linked to reduced student engagement.

Relationship Between Students Engagement and Performance in TLE

Based on the data, only the domain of Applying shows a statistically significant positive correlation ($r=.236$, $p< 0.05$) with student engagement. The correlations in Remembering, Understanding, and Analyzing are insignificant, suggesting no strong relationship between engagement and those domains under current conditions.

Table 11 Relationship Between Students Engagement and Performance in TLE

	Performance in TLE			
	Remembering	Understanding	Applying	Analyzing
Students' Engagement	-.083	.151	.236*	-.119

* Correlation is significant at the 0.05 level (2-tailed)

Based on the data, it appears that engagement was significant only in the "Applying" domain. Applying knowledge in TLE requires active, hands-on participation and sustained involvement, which are key engagement elements. Unlike lower-order tasks (e.g., remembering or understanding), application demands real-world practice, problem-solving, and physical tools. More engaged students are likelier to participate in practical tasks, seek feedback, and persist through challenges. In contrast, disengaged students miss these critical learning opportunities, leading to weaker performance. Therefore, in resource-limited double-shift settings, where time and support are scarce, engagement becomes a decisive factor in students' ability to apply what they've learned.

Students' negative perceptions of the double-shift system often led to disengagement. This disengagement correlates with reduced academic performance, particularly in complex or practical subjects like TLE. According to Benveniste et al. (2003), the double-shift system can hinder academic achievement by lowering instructional quality and reducing students' time to engage with material. Moreover, Mulkeen et al. (2007) reported that negative attitudes toward school systems, like double-shifting, reduce motivation and focus, lowering student engagement and learning outcomes.

While not all cognitive domains show a significant correlation, the presence of one considerable relationship is sufficient to say that there is a correlation between engagement and performance under the conditions of double-

shift schooling. Furthermore, given that students have a negative perception of double-shift education, which likely reduces engagement, and the engagement is shown to impact performance, we can deduce that Students' negative perception of double-shift schooling indirectly but significantly affects their academic performance through lowered engagement.

The data revealed that the mediating effects of student engagement on the relationship between students' perceptions in the double shift session and their performance are not possible since a highly significant relationship exists between the predictor, mediator, and dependent variables was not established.

CONCLUSION

The study found that students hold negative perceptions of the double-shift system, particularly regarding classroom atmosphere, student behavior, and teacher-related factors. Students expressed dissatisfaction with the learning environment, peer behavior, and teaching quality. Performance across cognitive domains showed strengths in lower-order skills (Remembering and Understanding), moderate success in Analyzing, and a notable weakness in Applying. Student engagement was low, with minimal participation and weak teacher-student interaction.

Students' perceptions of double-shifting factors were significantly related to their engagement and academic performance, especially in higher-order tasks like Understanding and Applying. Engagement was significantly linked to performance in the Applying domain, highlighting its importance in skill-based learning. However, engagement did not mediate the relationship between perception and performance, as strong connections among all three variables were not fully established.

Based on the inferential question and hypotheses of this study, the data revealed that; The null hypotheses, there is no significant relationship between the student's perception of double-shifting session factors and their performance, is partially sustained. The null hypotheses there is no significant relationship between student perception in the double-shift session factors and student engagement is not sustained. The null hypotheses that there is no significant relationship between student engagement and students' performance is not sustained. The null hypotheses that the student's engagement does not mediate the relationship between the student's perception of double-shift session factors and their performance is partially sustained. The study reveals an indirect yet meaningful connection between students' perceptions of the double-shift system and their levels of engagement and academic performance.

To address these issues, the study recommends creating a positive classroom atmosphere that supports hands-on learning, empowering teachers through targeted training, and promoting programs that encourage positive student behavior. Enhancing engagement through project-based, real-world tasks and involving students in classroom decisions can also boost motivation. Lastly, further research across subjects and grade levels, with input from students and teachers, is essential to fully understand and address the challenges of double-shift education.

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