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Academic Attitude as Mediator between the Relationship of Blended Learning Environment and Student's Performance in Technology and Livelihood Education

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ABSTRACT

The onset of the new normal in the school, as an effect of the COVID-19 pandemic, highlighted the importance of using blended learning to embrace the transition from pure online to face-to-face classes. This study intends to ascertain the mediating influence of academic attitude on domestic factors, teaching-learning practices, and students' performance in TLE (Technology and Livelihood Education) - Cookery in a Blended Learning environment among the Grade 9 students of St. John of Beverly School Inc. and the challenges of the new normal setup in education. The study employed the descriptive correlational design and a survey questionnaire distributed via Google Forms-Pearson product-moment-correlation coefficient to determine the relationship among the variables. The results revealed that academic attitude, self-discipline, and motivation have a significant effect on cognitive performance with r = .337 and r =.318 significance when tested at a .05 level of significance, respectively, and self-discipline has a significant effect on psychomotor performance with r =.282 significance when tested at a 0.05 level of significance. The researcher, however, recommends further study to investigate other academic attitudes such as optimism, diligence, perseverance, and resourcefulness or other more appropriate variables to study the mediating role of academic attitudes in the blended learning environment on students' cognitive and psychomotor performance.

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1. INTRODUCTION

Many were surprised by the early and untimely closure of the school year 2019–2020 as the enhanced community quarantine (ECQ) placed the entire Philippines into lockdown in the middle of March 2020, paralyzing and giving a momentary "lost in time" among our school administrators and education experts. They realized this time that change is inevitable. As stated in Republic Act (RA) No. 7722, known as the *"Higher Education Act*

of 1994," and Republic Act No. 11469, known as the *"Bayanihan to Heal as One Act,"* the emergence of the COVID-19 pandemic brought unprecedented disruptions in the lives of people all over the world [1]. As we look through the education sector, our quest for learning continues as various learning modalities have been improvised. Depending on how the school views its students, it may adopt one or a combination of in-person, online, blended, and homeschooling methods as the world of academia made a tremendous response to the call for education in this time of "new normal mode" brought by the COVID-19 virus. To address the situation, DepEd devised an algorithm for learning delivery modalities. Though the ideal way to teach TLE (Cookery) is face-to-face because this topic calls for students to demonstrate their abilities through performance and/or the creation of a product to demonstrate their understanding, it had to adapt the blended learning approach as one of the options that are adopted by St. John of Beverley School, Inc. Online classes via Google Meet were used for students to learn theories and principles. In contrast, face-to-face classes were maximized for activities and laboratory outputs. Meanwhile, learning resources such as recorded video presentations and offline reading materials were provided through Google Classroom.

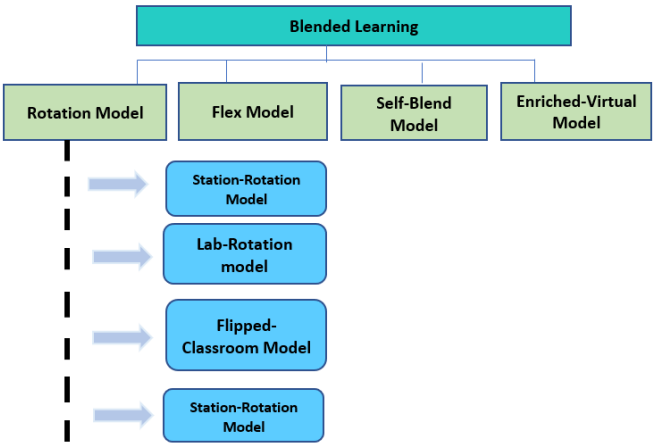

Figure 1. Blended Learning Models [2]

Blended learning (Figure 1) is one approach that combines the traditional classroom with technology-based learning. Blended learning recognizes traditional learning because it applies both face-to-face interactions in the classroom, and online multimedia technology outside the classroom, as mentioned by Halili & Zainuddin [3]. Blended learning is a general scope of the teaching-learning model [3] recognized in Staker and Horn [2], the four models of blended learning, and the flipped classroom is one element of the rotation model in blended learning. Blended learning models, as shown in Figure 1, are composed of a rotation model, a flex model, a self-blend model, and an enriched-virtual model. This study uses the rotation model, whereas the application involves and focuses on the uses of flipped classrooms.

Flip classroom, as Orim [4] mentioned, is a strategy that provides a platform for the students to learn in their own space and repeatedly to gain understanding; likewise, students are assisted to learn at their own pace according to their differences, which leads

to better understanding. The flipped classroom was more engaging and exciting than the traditional classroom [5]. The study of Halili & Zainuddin [3] confirmed that the flipped classroom is a learning model developed under the blended learning model, where students will not listen to lectures in the classroom but at home. Moreover, in the study of Thomas [6], respondents agreed that the flipped learning approach enhanced their motivation to learn the subject content. With the unique structure of the blended learning system, each student's home environment is significant and acts as a support system for each school. With their parents present at home, children can have someone to turn to for help when they need it in their online classes. Kumi-Yeboah [7] cited that parents strongly influence their children's academic achievement by helping them develop perseverance, an internal locus of control, and organizational and time management skills. Learning approaches are used with teaching techniques to encourage, involve, and improve student learning. TLE, as an academic discipline, mainly focuses on outcomes. Thus, the relevance of face-to-face classes has been highlighted because no other modality can match its effectiveness due to the personal nature of the learning process between the student and the teacher. The learning outcomes about the knowledge and skills students acquired at the end of a particular assignment, class course, or program help the student understand the connection and reason why that knowledge and skill will be helpful to them.

2. METHODS

The researcher utilized a descriptive-correlational research design method to determine the mediating effect of academic attitude in teaching-learning practices, domestic factors, and student performance in a blended learning environment. The respondents of this study are the 49 Grade 9 (Junior high school) students enrolled at St. John of Beverley School Inc. for the school year 2022-2023, taking up TLE (Cookery). Students' cognitive performance is measured through a 45-item test. The rating of the students is taken accordingly from their exam scores, which measure their knowledge, understanding, and skills from the four learning competencies recommended in the TLE-9 Cookery module in the first quarter, and from their laboratory performances in preparing a product through the use of rubrics to determine their level of psychomotor performance. The researcher crafted and used a questionnaire that was distributed via Google Forms. The questionnaire was divided into three parts with a closed-ended question type using a five-point Likert scale (5 strongly agree, 4 = agree, 3 = moderately agree, 2 = disagree, 1 = strongly disagree). The first part of the blended learning environment is the domestic factors, and the second part is teaching-learning practices using a 5-point Likert scale (5=strongly manifested, 4 = manifested, 3 = moderately manifested, 2 = not manifested, 1 = strongly not manifested). Part III, the academic attitude of discipline, responsibility, and motivation, is measured on a five-point Likert scale. The researcher used other research instruments, such as video presentations readily available on the Internet. Five topics in 1st quarter Cookery were included in the study. Each instructional video has an average length of 8 to 12 minutes. The researcher herself discussed the lessons for deepening and gave illustrative examples of each lesson. After the validation stages of the instructional materials, they are used and utilized in a blended learning approach. The school principal

of St. John of Beverley School, Inc secures permission to administer the questionnaire to the students. A separate letter to the respondents is given for permission to conduct the study. The questionnaire is made available in Google Forms, wherein the link is given through the Google Classroom of the class, assuring them of confidentiality in their work. The researcher collected, classified, tabulated, and recorded the data and sent it to the Statistics Center of LSPU for analysis and interpretation. Frequency count and per cent distribution describe the respondents' profile, including information about their parenthood, household members, and socio-economic condition, which describes the status of their domestic environment. The weighted mean and standard deviation are used concerning domestic factors such as parental involvement and home learning sites, as well as learning resources and teaching-learning practices in a blended learning environment. The Pearson product-moment-correlation coefficient determines the relationship between teaching-learning practices, the domestic environment, and students' performance in TLE.

3. RESULTS AND DISCUSSIONS

3.1. This study focuses on students' perceptions of domestic factors in the blended learning environment.

Table 1 shows data on the respondents' perceived effectiveness of domestic factors as to the involvement of their parents or guardians in school work or activities. The overall mean was 3.99, with "involved" as its interpretation indicates that respondents' parents or guardians are involved in school work and activities. Indicator number 2, "Supportive in all school activities in which I am interested," received the highest mean score of 4.41.

The results revealed that most parents or guardians understood the value of supporting their children in schoolwork or activities. Giving them support through words and actions can help their children succeed in their studies. For some moral and emotional support, family connection and engagement are crucial; Bhamani [8] added that when parents and children collaborate in learning activities, bonding between parents and children increases. Time is incredibly challenging if parents work from home or offices and have schedules to follow [8]. Monitoring their children's activities may, be it in online or face-to-face classes, has been compromised when work demands become overwhelming. Thus, as noted by Smith [9], the role of an adult family member, often the parent, is so vital that an increasing number of fully online K-12 schools are identifying specific roles and responsibilities on the part of the parent or adult family in the home.

The work of Baytiyeh, as cited by Di Pietro et al. [10], stated that parental involvement is also crucial for the success of the online education environment. Support and guidance of every parent or guardian are highly needed to administer blended learning appropriately. Providing them with a place conducive to learning is needed, but when parents have limited resources, the students must maximize their available resources. The respondent's perception of their home learning environment serves as their place of learning outside the school premises. The overall mean is 3.93, with a verbal interpretation of "Manifested." The highest mean (4.47) is indicator number 1, "I have my particular area in our house intended for my online classes," with "manifested" as its interpretation. It is

essential to secure the conduciveness of their learning space in their own homes. Since most of the respondents belong to middle-income families, they have been well provided with the necessary gadgets for online learning and a comfortable area with a study table and chair, making their online classes less strenuous. According to Ng [11], various studies have shown a need for a quiet place to listen. For learning to be effective, learners need to choose or control their physical learning environment, or "studying environment," Having a designated studying place that is relatively free from interruptions is significantly associated with academic performance, satisfaction, and course completion among online learners [11]. Additionally, a strong internet connection for their online classes can significantly aid their ability to learn effectively. Low bandwidth restricts students' access to resource-rich materials (e.g., video clips and video streaming) and the download of large files [11], which affects their performance in an online class.

Table 1. Respondent's Perceptions as to Domestic Factor

Indicators	$\bar{x}$	SD	Verbal Int.
Involvement of Their Parents/Guardians/ Siblings In School Work/Activities			
1. It provides me with different gadgets I need for school	4.10	1.123	Involved
2. Supportive of all school activities I am interested in.	4.41	.934	Involved
3. Reprimanded me if I did not study my lessons.	4.24	.990	Involved
4. Assist me when I have school assignments.	3.63	1.167	Involved
5. Encourage me to practice at home what I have learned in school.	3.94	1.144	Involved
6. Remind me to do my homework and projects.	4.31	.918	Involved
7. Monitor my time to study every day at home.	3.61	1.239	Involved
8. Make extra effort in helping me to learn better.	3.69	1.176	Involved
9. Give me incentives when I accomplished something in school.	3.92	1.115	Involved
10. Encourage me to develop an interest in schoolwork.	4.06	1.197	Involved
Overall	**3.99**	**.750**	**Involved**
Home Learning Site			
1. I have a particular area in our house intended for my online classes.	4.47	.96	Manifested
2. I have privacy in my study area when taking online classes	4.19	.98	Manifested
3. Sounds/ noises (coming from devices, people's talk, and external sources) around our house did not distract me during class hours.	3.45	1.02	Moderately Manifested
4. I can control the sounds/noises in my study area.	3.63	1.13	Manifested
5. The level of lightning in my study area is controllable to the level of my visual comfort.	4.04	1.02	Manifested
6. My study area is well-ventilated and has a good atmosphere for me to concentrate when taking online classes.	4.14	.91	Manifested
7. I have access to the necessary tools or equipment needed to perform laboratory activities on the subject matter.	3.90	.87	Manifested
8. I can perform practical skills even at home.	4.20	.96	Manifested
9. The power supply is not a problem in our place.	3.88	1.13	Manifested
10. Internet connectivity is not a problem.	3.43	.96	Moderately Manifested
Overall	**3.93**	**.53**	**Manifested**

Legend: 4.50-5.0 -highly involved/ manifested, 3.50-4.49- involved /manifested, 2.50-3.49- moderately involved/manifested, 1.50-2.49- less involved, manifested, 1.0-.49 not involved/ manifested

3.2. Teaching-Learning Practices

Table 2. Respondent's Perceptions of Teaching-Learning Practices in Online Classes

Indicators		$\bar{x}$	SD	Verbal Int.
1.	My confidence level increased.	3.53	1.1	Manifested
2.	It makes my learning more convenient.	3.82	.95	Manifested
3.	I can do my school activities at my own pace.	3.94	.90	Manifested
4.	It improves my communication skill with my teachers and classmates.	3.51	1.1	Manifested
5.	I can intermingle and interact assertively in our lessons.	3.65	.78	Manifested
6.	I can study in the comfort of my place at home or wherever I want.	3.96	.96	Manifested
7.	I enjoy joining the class discussion.	3.57	.91	Manifested
8.	I can build up my skills in interacting with technology.	4.16	.75	Manifested
9.	It facilitates sharing of knowledge and ideas with others.	3.84	.82	Manifested
10.	I can easily get the information that I want.	4.22	.87	Manifested
	Overall	**3.82**	**.59**	**Manifested**

Legend: 4.50-5.0 -highly manifested, 3.50-4.49-manifested, 2.50-3.49- moderately manifested 1.50-2.49- less manifested, 1.0-.49 not manifested

Table 2 exhibits the mean score of the respondent's perception of their online classes. The highest mean of 4.22 and SD of .87 is from indicator no. 10, "I can easily get the information that I want," with "Manifested" as its description, which brought convenience for the students, where they can easily access online materials anytime [12]. They are active in using resources online; they even surpass the ability of their teachers, who are only average when using different online applications. For the most part, students use PowerPoint presentations or Canva to make their presentations more colourful and captivating by using graphics and livelier animations. Studies about online classes have become an essential and contemporary issue among educators in the quest to find the best and most timely strategies that can apply to our 21st-century learners, who are called to be digital natives.

Online learning is a teacher-led education through the Internet with teachers and students separated geographically using the web-based delivery system with software that provides a structured learning environment [7]. Indeed, students could speak or participate in discussions better in online classes than in face-to-face ones. Delicano [13] cited that less interaction between instructor and students resulted in low affective learning, frustration, and a negative attitude towards the instructor's effectiveness. Giray et al. [14] stated that interactions with their peers and classmates (via Messenger, Zoom, or Google Meet) are unlimited. Furthermore, Alawamleh et al. [15] find shy students more interested online than in conventional settings. Students reported that their comprehension skills improved, and they became more productive in learning [13].

Table 3. Respondent's Perceptions of Teaching Learning Practices as to Face-to-Face Classes

Indicators	$\bar{x}$	SD	Verbal Int.
1. I can concentrate better in the classroom with fewer distractions.	4.08	.91	Manifested
2. I gain a better understanding, stories, and real-life examples from my teachers and classmates	4.43	.68	Manifested
3. I have a greater chance of completing my seatwork successfully.	4.31	.71	Manifested
4. Makes my learning more interesting and memorable.	4.20	.82	Manifested
5. I am more comfortable and confident in expressing my thoughts and ideas during discussions.	3.88	.97	Manifested
6. It facilitates sharing of knowledge and ideas with others through my teacher and classmates' physical presence, body language, and voice.	4.02	.85	Manifested
7. Teachers manage the delivery of lessons well.	4.29	.74	Manifested
8. Improve my ability to be creative and innovative.	4.14	.76	Manifested
9. The presentation of lessons becomes lively and interactive.	4.22	.74	Manifested
10. I have the opportunity to have hands-on experience during the laboratory with the help of my classmates and the supervision of my teacher.	4.35	.75	Manifested
Overall	4.19	.58	Manifested

Legend: 4.50-5.0 -highly manifested, 3.50-4.49-manifested, 2.50-3.49- moderately manifested 1.50-2.49- less manifested, 1.0-.49 not manifested

Table 3 depicts the respondent's perception of their face-to-face classes with an overall mean of 4.19, with a verbal interpretation of "Manifested." Indicator no. 2, "I gain a better understanding, stories, and real-life examples from my teachers and classmates," has the highest mean of 4.43, interpreted as "manifested." Thus, the findings reveal that face-to-face instruction is more effective with our respondents than online instruction, particularly in class discussions where teachers facilitate the concepts students have learned in their online classes. After two years of learning, most students can appreciate every detail of the importance of being inside the classroom. Their classmates' presence, stories shared during the discussion, and laughter and facial expressions had engraved in their most profound memories that the online class had missed. In TLE laboratory classes, it is of prime importance for the students to have hands-on learning; this is an essential basis for assessing "performance." Though mistakes during laboratory performance may happen, it is still part of the learning process. With the assistance of their teacher, these experiences inside the laboratory room are turned into something that even a book cannot wholly provide. In a study by Salter and Gardner [16], students responded more favourably about their experience of face-to-face sessions than online sessions. It is noteworthy to state that Abdullabbas & Jawad [17] as they confirmed that the practical (face-to-face labs) were more enjoyable because face-to-face sessions allowed the application of learning in real-life settings and direct access to the lecturer. Because face-to-face education has been the standard for centuries, it is known as a "real" learning method.

3.3 Respondents' Academic Attitudes

Table 4. Respondents' Perceptions of Their Academic Attitudes

Indicators	$\bar{x}$	SD	Verbal Int.
Discipline			
1. I study even without being told.	4.08	.86	Disciplined
2. I study and do my homework first before anything else (video games/watching drama etc.)	3.92	1.1	Disciplined
3. I do not resort to cheating in my assignments and exams	4.16	1.31	Disciplined
4. I used to do/pass my assignment on time.	4.27	.81	Disciplined
Overall	**4.11**	**.77**	**Disciplined**
Responsibility			
1. I used to ask someone when there is something I did not understand esp. in my assignments.	3.98	.97	Responsible
2. I give extra effort to work on my projects and assignments.	4.20	.96	Responsible
3. I listen attentively and participate actively in class	4.16	.80	Responsible
4. I used to read my notes before or after classes.	4.08	.96	Responsible
Overall	**4.11**	**.61**	**Responsible**
Motivation			
1. I study because I like to learn.	3.98	1.09	Motivated
2. I study because grades are important for my future.	4.53	.87	Highly Motivated
3. I study to fulfill my parent's expectations.	4.61	.67	Highly Motivated
4. I study to reciprocate my parent's effort in providing me with a good education.	4.65	.63	Highly Motivated
Overall	**4.44**	**.67**	**Motivated**

Legend: 4.50-5.0 -highly disciplined/responsible/motivated
3.50-4.49- disciplined/responsible/motivated 2.50-3.49-moderately disciplined/responsible/motivated
1.50-2.49- less disciplined/responsible/motivated, 1.0-.49 not disciplined/responsible/motivated

Table 4 shows the respondents' mean concerning their academic attitudes. Discipline has the highest mean of 4.27, indicator no. 4, "I used to do or pass my assignment on time," with an overall mean of 4.11, or "disciplined" as its verbal interpretation. This shows that self-discipline remains observable, especially regarding the timely submission of their assignment. Time management among students is essential for them to maximize their time and be able to submit all the requirements without delay. As cited by Aziz [18], this condition is characterized by various behaviours, such as being absent from school, not submitting, or submitting late assignments.

Furthermore, responsibility as an academic attitude has an overall mean of 4.11 with "responsible" as its description. The highest mean of 4.20 is indicator 2, "I give extra effort to work on my projects and assignments," and the verbal interpretation is "responsible." A responsible student works independently and confidently on a particular task. As a result, this enhances the person's personality and indicates maturity, especially among teenagers. Ayish and Devici [19] cited that in a blended learning environment, especially in online classes, the teacher must pay attention to developing the character of students' responsibility for their participation in the learning process and their tasks [18]. Students were most likely to show leadership as they learned to take all actions and decisions into account, giving themselves a sense of self-worth. Lastly, motivation has the highest mean of 4.65: "I study to reciprocate my parents' effort in providing me a good education," and "highly motivated" is its verbal interpretation. The overall mean is 4.44, with "motivated" as its verbal interpretation. This study implies that our respondents' sense

of motivation gives them the willpower to persevere despite the challenges they face in their academic pursuits. The respondents' desire to reciprocate their parents' efforts in giving them a good education demonstrates a positive attitude among our respondents. It thus demonstrated that "Filial love" towards their parents strongly manifests. Research conducted by Schunk and Zimmerman and cited by Alawamleh [15] shows that motivated learners are more likely to participate in challenging activities, participate actively, enjoy and adopt a deep learning approach, and exhibit increased performance, persistence, and creativity.

According to Simba et al. [20], academic attitude is essential to every student, especially when left alone in front of these emerging technologies. Self-discipline, as found in a study, implies that academic performance increases among pupils with an increased level of discipline and a sense of responsibility, which is greatly needed. Likewise, a personal conviction and motivation to pursue his or her studies amidst the difficulties will significantly help.

3.4 Correlation of Variables

Table 5. Correlation Between Blended Leaning Environment as to Domestic Factors and Teaching-Learning Practices and Students' Performance

Blended Learning Environments	**Cognitive**			**Performance**
	Knowledge	Skills	Understanding	
I. Domestic Factors				
Gender	.177	.201	.162	.408**
Parental involvement	-.021	-.008	-.029	.040
Home Learning Site	.192	.227	.159	.161
II. Teaching-Learning Practices				
Learning Resources				
Online gadgets	.200	.141	.069	.161
Offline reading materials	.201	.120	.098	.155
Online class	.142	.133	.089	.170
Face-to-face class	.321*	.319*	.244	.283*

***Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).*

Table 5 shows that in the blended learning environment, as to domestic factors, a significant relationship has been shown in gender (r =.408) at the 0.01 significance level. Among the 49 respondents, 25 or 51% are male, which affirms that interest and engagement in cooking are not just for females but also attract males. Teaching-learning practices in face-to-face classes, on the other hand, showed a significant relationship to students' knowledge (r =.321), understanding (r =.319), and performance (r =.283) when tested at the 0.05 level of significance. Since there is direct interaction between teachers and students, face-to-face learning tells if being effective in enhancing students' behaviour following the COVID-19 pandemic.

It is essential in the learning process that the students are interested in it. Because face-to-face education has been an educational standard for centuries, it is known as a "real" learning method [17].

Table 6. Correlation Between Blended Learning Environment and Respondents' Academic Attitude

Blended Learning Environments	Academic Attitude		
	Self-discipline	Responsibility	Motivation
I. Domestic Factors			
Gender	.158	.130	.022
Parental involvement	.109	.323*	.241
Home Learning Site	.398*	.275	.355*
II. Teaching-Learning Practices			
Learning Resources			
Online gadgets	.330*	.354*	.468**
Offline reading materials	.265	.477**	.339*
Online class	.343*	.372*	.371*
Face-to-face class	.343	.539**	.380**

***Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).*

Based on the findings in Table 6, the respondents' perceptions of the blended learning environment regarding domestic factors and teaching-learning practices show that parental involvement is related to responsibility (r =.323) when tested at a 0.05 significance level. Academic attitude "Responsibility" shows significance in parental involvement, suggesting that when parental participation is present in the respondents' domestic environment, their sense of responsibility grows—possibly due to the "modelling" their parents exhibit.

Home learning sites significantly affect self-discipline (r =.398) and motivation (r =.355) when tested at 0.05 significance. Self-discipline can be seen in action since they must complete their schoolwork at their own pace. Their family's presence, favourable physical conditions, and desire to repay their hardworking parents who persevered through the discomforts and dangers of the pandemic likewise motivated them. In a blended learning environment, the home setting becomes their secondary learning space after their school classroom.

Teaching-learning practices, which include online gadgets, offline reading materials, online classes, and face-to-face classes, have a significant relationship with academic attitudes. Online gadgets are significantly related to all academic attitudes of self-discipline (r =.330), responsibility (r =.354), and motivation (r =.468) in teaching and learning practices when it comes to learning resources because they make students' schoolwork more convenient. The Internet has made it simple for students to get the information they need for their research and other academic tasks and to obtain the materials they require from various sources. For the most part, students use PowerPoint presentations or Canva to make their presentations more colourful and captivating by using graphics and livelier animations. Online gadgets and applications allow online learners to learn and study effectively at home and in multiple locations using appropriate learning devices and applications [11]. According to Gonzalez [21], research shows that all of these gadgets offer a wide range of functions and applications. However, taking notes during class remains unquestionably beneficial, whether during lectures or from readings. In today's generation, it is rare to find students who still value taking notes in class. Self-discipline is a challenge among the respondents in the use of their gadgets. Priority should

be clear and identified so that they will use their gadgets for their original purpose, study. With the use of portable and mobile devices, online learners should have the flexibility to move across locations within the home to complete learning activities [22].

Offline reading materials were significantly related to responsibility (r =.477) when tested at a 0.01 significance level and motivation (r =.399) at a 0.05 significance level. Offline reading materials such as textbooks and other printed materials provided by their teachers are frequently done at their own pace, primarily when an online class is held in an asynchronous setting. Various studies, such as Solak [23], confirmed that their participants preferred paper-based reading because computer screens irritate their eyes and they could not use reading strategies effectively. Reading materials on paper is highly beneficial for learners, as it engages multiple brain parts simultaneously. Materials supplied to them via Google Classroom are intended to be printed if desired. However, most respondents prefer to use digital copies instead of paper because it eliminates the need for paper that they must always carry around. However, some students use printed materials, and these usually are "grade-conscious" students.

Meanwhile, the online class is significantly related to all academic attitudes of self-discipline, responsibility, and motivation, with an R-value of .343, .372, and .371, respectively, when tested at a 0.05 significance level. Since online classes are held at their convenience, students can practice self-discipline. Most of their online activities can be easily monitored through Google Classroom if they adhere to the day's activities, and some of them are alone during the day, mainly if both of their parents are employed. In these circumstances, motivation manifests itself as a desire to learn. The face-to-face class had a significant relationship between responsibility (r = .539) and motivation (r =.380) when tested at a 0.01 significance level. As many studies have claimed, motivation increases in a face-to-face setting since the presence of their teachers and classmates gives them a better understanding of the subject matter through the stories and real-life examples shared in the class. In TLE, face-to-face class is undoubtedly crucial because the experienced are hands-on in their laboratory work. In every activity inside the laboratory room, their discipline, sense of responsibility, and motivation are visible as they try, work, and learn together and encourage one another, especially when certain unavoidable circumstances occur during the laboratory.

Table 7. Correlation Between Respondents' Academic Attitude and Their Psychomotor Performance in TLE

Academic Attitude	**Cognitive**			**Performance**
	Knowledge	Skills	Understanding	
Self-discipline	.245	.246	.337*	282*
Responsibility	.110	.095	.112	.205
Motivation	.189	.172	.318*	.173

***Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).*

Table 7 shows the relationship between respondents' academic attitudes and their performance in TLE. The results revealed that academic attitude, self-discipline, and motivation have a significant effect on cognitive performance with r =.337 and r =.318 significance when tested at a .05 significance level, respectively, and self-discipline to skill

performance with r =.282 significance when tested at a 0.05significance level; therefore, it means that they are partially significant. A self-disciplined student knows and sets the priorities in his or her life. One of the challenges of blended learning is time. Because students sometimes had to learn or study at their own pace, time management is seen as essential and helpful if mastered by the respondents. As cited by Nesamalar et al. [22], managing time well could lead to better academic performance and is a significant life management skill. Lastly, motivation significantly affects understanding (r =.318) when tested at a 0.05 significance level, which means there is a relationship among these variables, so they are partially significant. The likelihood that a student will learn his or her lessons quickly and subsequently score well on tests is higher the more motivated the student is in their studies. There may be another academic attitude that can use to relate that is more appropriate than responsibility since the sense of responsibility may also have manifested in other academic attitudes used in this study if responsibility is not perceived to be related to both cognitive skill and performance skill. According to Mbaluka [24], self-discipline involves focusing on activities that help attain academic success, such as completing school assignments on time, reviewing notes, and listening to teachers in class instead of engaging in tendencies that distract from accomplishing academic assignments. Gbollie & Keamu [25] further mentioned that the students' self-discipline is also associated with their motivation. It is a basic recipe for academic success and plays an essential role in learning because it significantly explains academic performance.

4. CONCLUSION

The findings in this study reveal that the blended learning environment is significantly related to certain variables used in domestic factors and teaching-learning practices, such as face-to-face classes, which are seen as significant to students' performance. The null hypothesis that no significant relationship exists between the respondent's academic attitude and their psychomotor performance in TLE is partially sustained since the academic attitude, self-discipline, and motivation have shown a significant relationship to their performance in TLE. Furthermore, lastly, the null hypothesis stating that there is no significant relationship between the blended learning environment and students' performance in the mediated academic attitude is partially sustained as the mediation analysis could not be performed due to the absence of a relationship between variables, the total effect (c) may be non-significant due to the small sample size, or the assumptions for testing the total effect were not met.

Based on the findings and conclusions, the following recommendations are suggested: (1) The parents are encouraged to look after their children's "learning space" or "studying environment" at home. Providing them with gadgets and technologies that would help in their studies is an essential factor for online learning, but this will only be as effective without proper and constant guidance from the parents. (2) School administrators and curriculum leaders may restructure the alignment of their learning plans by making them adaptable to be applied both in the classroom and online. Support teachers' professional development by updating or retooling training on technology adaptations and curriculum design. (3) The teachers may volunteer to participate in updating "Seminars" to

keep their lesson plans flexible for delivery in both online and face-to-face formats that would help them deal with any issues that might later confront academia due to unanticipated events. 4) Future researchers may investigate other academic attitudes like optimism, diligence, perseverance, resourcefulness, or other more suitable variables to study the mediating role of the blended learning environment on students' cognitive and psychomotor performance. They might also consider increasing the sample size and applying other statistical techniques to test the mediation analysis of the factors.

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