

Implementation of Blended Learning Modality: An Evaluation Based on ABCD Model

Edgermi G. Gingoyon

Sacred Heart School – Ateneo de Cebu, Cebu City, The Philippines

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ABSTRACT

In the integration of both online and face-to-face interactions, blended learning has become a significant educational approach. To examine its implementation, this study uses a descriptive-evaluation mixed-methods research design (quantitative and qualitative) to evaluate the implementation of the Blended Learning Modality based on ABCD Model. Using primary and secondary sources of data, adopted tools to measure learners' satisfaction and engagement levels, and interview questions to validate participants' responses, this study thoroughly evaluated the participants, programs, effects, and impact. Results show that the implementation of the program was effective in its effect on the satisfaction and engagement levels and academic performance of students and its impact on parents. These findings indicate that effective implementation of blended learning is a factor in students' success. The researcher postulate recommendations to address a few gaps.

Keywords: *evaluation, implementation and learning modality*

INTRODUCTION

The emergence of technology and the need for adaptability in any given situation and context give rise to flexibility in learning and teaching. Many educational institutions have targeted blended learning as a means to integrate pedagogy and technology into teaching and learning. The concept of "blended learning" encompasses various delivery methods, technologies, and teaching approaches, but essentially involves a combination of in-person and online elements (Kassner, 2013). A few number of journal articles that specifically addressed online or blended learning in K-12 contexts was observed (Kassner, 2013). To date, little research exists that examines the practices, benefits, issues, and challenges of utilizing this learning modality. Moreover, there is limited knowledge regarding effective approaches for K-12 blended learning and teaching. Hence, this present paper evaluates the implementation of blended learning modality in terms of program, students' course outcomes, satisfaction, and engagement, its effect, and its impact on the school and community as a whole.

Scholars have underscored the need for

rigorous evaluations of blended learning initiatives to inform pedagogical practices and enhance educational outcomes. For instance, Garrison and Vaughan (2013) emphasized the significance of designing blended learning environments that foster meaningful interaction and collaboration among students, thereby enhancing learning outcomes. Similarly, Uz and Uzun (2018) highlighted the potential of blended learning to promote student autonomy and self-regulated learning, ultimately leading to improved academic performance. These studies underscore the multifaceted nature of blended learning and the importance of considering various pedagogical approaches within this modality.

In the context of the locale of the study, the evaluation of blended learning implementation holds particular significance. Several studies report on the effectiveness of its use targeting all concerned in the process whether an implementor or recipient: student, teacher, or administrator. In the study of Harding, Kaczynski, and Wood (2005), the evaluation revealed that students viewed the online component's flexibility as a

significant benefit, as the anytime/anywhere access allowed them to work whenever they were most suited and productive. Blended learning represents a highly effective method in teaching English as it develops students' skills such as communication, receiving information, and interacting with teachers (Fakhir & Ibrahim, 2018). As reported in Kintu, Zhu, and Kagambe's (2017) study, the high intrinsic motivation of students, satisfaction, and knowledge construction, as well as excellent performance on examinations, indicate the potential effectiveness of blended learning. The use of these can contribute to the creation of a successful learning setting that incorporates both in-person meetings and online components. In many educational settings, especially in developing regions or underserved communities, access to quality education remains a challenge. The integration of blended learning modalities presents an opportunity to address some of these challenges by providing flexible learning options, overcoming geographical barriers, and catering to diverse learning needs (Santiago Jr., Ulanday, Centeno, Bayla, & Callanta, 2021).

However, despite the growing interest and adoption of blended learning, there exist significant gaps in the literature. One notable gap is the limited empirical research that systematically examines the long-term effects and sustainability of blended learning initiatives. For instance, as noted by Means et al. (2013), many studies focus on assessing student performance immediately following the implementation of blended learning, providing insights into initial outcomes but offering limited understanding of the sustained benefits or challenges associated with these approaches. While blended learning research often relies on quantitative approaches to assess student outcomes and satisfaction, there is a lack of integration of qualitative methods that can provide deeper insights into the processes, experiences, and contextual factors that contribute to the implementation and effectiveness of blended learning initiatives (Voogt et al., 2017). The article of Cuesta Medina (2017) highlights a deficiency in existing literature concerning the various blends utilized in the implementation of blended learning, which in a way introduces a knowledge gap. Furthermore, there is a scarcity of

studies that systematically compare the outcomes of blended learning interventions across different learner demographics, such as age, socioeconomic status, and prior academic achievement (Poirier, Law & Veispak (2019).

This study addresses these gaps by conducting an evaluation of blended learning implementation based on the ABCD model, a comprehensive framework that considers key aspects of blended learning environments. A refers to trainees, program participants, or students. In this case, students and teachers are referred to as Component A. Component B includes the implementation and operations. The implementation of the Blended Learning Modality, its policies, program monitoring, and other procedures are the foci in this component. Component C refers to the effects of the program on the trainees, students, or participants. As in the case of this research, this focused on how efficiently the program was carried out. Specifically, it focused on describing the course outcome of learners (General Point Average) and determining their level of satisfaction and engagement. Component D refers to the social impact of the program through, though not always, the trainees. Obviously, this is remote and is "in the future" but is probably significant and lasting. In this study, this referred to the significant impact among the students on the community channeled by the learning acquired from a blended setup. By systematically assessing each component within the ABCD model, this study sought to provide insights into the effectiveness of blended learning approaches and inform evidence-based practices.

Evaluation of the effectiveness of blended learning is prevalent in higher education and is limited in basic education. The program evaluated in this research is the blended learning modality of a certain Junior High School in Mandaue. The dimensions of the program focused on the intents and actualities. Actualities are the observations and actual happenings while the intents are the standards, expectations, ought-to-be's, and in their simplest forms, plans; These can also mean purposes or objectives in the context of the model. The two lines (solid and broken lines) approaching each other would indicate an outstanding or superb dimension, meaning "what should be" is "what exists." Nonetheless, if the distance between the

two boxes is large, the disparity between "what is" and "what should be" is also large. The intended effects are the stated objectives or purposes of the

program, while the intended social impact is the program visions (*see Figure 1*) (Ochave, 2003).

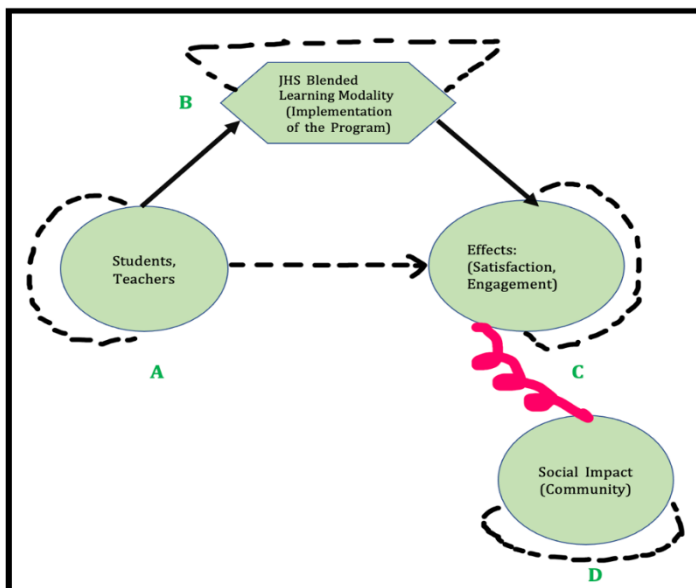


Figure 1. ABCD Model

This study extends beyond academic outcomes, encompassing broader implications for educational equity and inclusivity. By examining the implementation of blended learning within specific locale, this research has the potential to identify strategies for narrowing educational disparities and promoting access to quality education for all learners. Furthermore, by emphasizing the importance of rigorous evaluation, this study contributes to the ongoing dialogue on effective educational practices, ultimately striving towards more equitable and inclusive educational systems. The study evaluates the effectiveness of the blended learning modality using the ABCD Model. Specifically, it seeks to answer the following:

1. What are the intents and actualities of the participants of the blended learning modality?
2. What are the operations and processes of the blended learning modality program?
3. What are the effects of the blended learning program on the participants in terms of the following:
 - 3.1. learner satisfaction;
 - 3.2. learner engagement;
 - 3.3. academic performance?

4. What is the impact of the blended learning program on the community?
5. What recommendations can be proposed to enhance the implementation of the blended learning modality?

RESEARCH METHODOLOGY

This section discusses the different means and methods by which the study is conducted.

Design

The study employs the descriptive–evaluative design to determine the effectiveness of the implementation of the blended learning approach. The descriptive–evaluative design makes use of sources of primary and secondary data. The documents that serve as the data are the mean average grade of the students (course outcome of learners) and level of learner satisfaction and engagement using the weighted mean description with the descriptors in the Likert scale. These are used to answer Components A and C. The blended learning modality is thoroughly describes identifying its intents and actualities to answer Component B. The gathered interviews and discussions from parents to describe the social impact of the

program undergo thematic analysis. This is to answer Component D.

Environment

The study was conducted in one of the private Junior High Schools (JHS) situated in Mandaue City, Cebu. It is a Catholic and Chinese-Filipino school run by the Jesuits and is a member of the Ateneo network of schools in the Philippines. Currently, there are 1,108 Junior High School students.

Since the start of the school year 2022 – 2023, the JHS adopted the 4-day in-person and one-day online learning as one of the options provided for private schools mandated in the Department of Education Order No. 44. However, it implemented online learning in 2020 at the onset of the pandemic.

Participants

The participants of the study encompass the Junior High School students and parents. The sample size for students is 286 and is determined using the raosoft calculator with a 5% margin of error, 95% confidence level, and 50% response distribution. So that there is equal distribution of the sample size to the different grade levels (Grades 7 – 10), the proportional stratified sampling was used. This involved taking random samples from stratified groups, in proportion to the population. For example, the population of Grade 7 is 266; it was divided to the whole Junior High population (1,125). It's quotient (0.24) was multiplied to the sample size (286), and the result (68) is the number of respondents for that grade level. Getting the proportion for other grade levels follow the same formula. Moreover, to aid the researchers in identifying the respondents, the following inclusion criteria were considered: (a) must be Junior High School students currently enrolled for the school year 2022 – 2023, (b) must have experienced the blended learning modality (c) must have a Term 2 general point average in all subjects, (d) must have an active email address, (e) within the reach of the class adviser, especially for much-needed communications, and (f) willing to take part in the survey. The following exclusion criteria applied: (a) new

student and was not able to experience blended learning modality.

Parents, through a survey, were also engaged to communicate the social impact of the blended learning modality. One hundred fifty-six (156) of them responded through email blast communication. Parents whose sons or daughters were in the blended learning modality are part of the study. Their experience in the supervision of the children at the onset of blended learning modality was of great help in answering the questions. On the other hand, parents who did not experience monitoring their children in this kind of modality are not included in the study.

Instrument

One instrument used in this research is a questionnaire adopted from Ozkan, et al., (2008) based on the Hexagonal E-Learning Assessment Model (HELAM). It is a conceptual model for evaluating the success of e-learning, which assesses learner satisfaction with both internet-based learning management systems and blended learning (Ozkan & Koseler, 2009). HELAM was created to evaluate the effectiveness of e-learning across six dimensions: 1) Technical Issues: System Quality; 2) Technical Issues: Service Quality; 3) Technical Issues: Content Quality; 4) Social Issues: Learner Perspective; 5) Social Issues: Instructor Attitudes; and 6) Supporting Issues. The tool has been validated, with all six dimensions deemed significant.

To measure students' engagement, a questionnaire adopted by Fredricks, Blumenfeld, and Paris (2004) is used. This identifies three elements of student engagement: behavioral, emotional, and cognitive.

These two instruments, on a 4-point Likert scale, ask the level of agreement and disagreement among the participants.

Semi-structured interview questions were crafted to gather responses from the parents.

For the two adopted research instruments, the researcher sought permission from the authors via email correspondence.

Data-gathering Procedure

After getting clearance from the Research Ethics committee, informed consent and assent

forms were distributed to the targeted respondents and their parents or guardians. They were given ample time to review their participation in the study. The researcher awaited feedback from the respondents, ensuring their voluntary agreement to participate in the study. Once consent was obtained, respondents were granted access to the official Google Form link for questionnaire completion. Respondents had the flexibility to work at their own pace while responding to the survey.

A semi-structured interview approach, with a predetermined set of open-ended questions was employed to extract detailed experiences among targeted participants. All interviews were transcribed verbatimly to ensure the faithful documentation of every spoken word. In addition to audio recordings and transcriptions, the research took comprehensive field notes during interviews. The subsequent analysis of the qualitative data involved the application of thematic analysis, allowing for a thorough understanding of the rich insights from the participants.

Data Analysis

The quantitative data gathered in this study are analyzed using descriptive statistics; specifically, the weighted mean is used to summarize the satisfaction and engagement levels of the participants. Paired sample t-test is used to determine the difference in academic performance using the general point average for two school years.

Conversely, the qualitative data obtained from interviews and open-ended questions underwent thematic analysis, a method for identifying recurring patterns or themes within qualitative data (Maguire & Delahunt, 2017). Braun and Clarke (2006) advocate that thematic analysis is fundamental and provides essential skills applicable to various analyses. According to several scholars (Alhojailan, 2012; Boyatzis, 1998; Javadi and Zarea, 2016), there are diverse approaches to thematic analysis. In this study, the researcher adopted Braun and Clarke's (2006) six-step framework, chosen for its clarity and practicality in conducting thematic analysis (Maguire & Delahunt, 2017).

For Step 1, the researcher read and re-read the transcripts of parents and teachers as secondary

sources of data. For Step 2, the researcher generated initial codes from the transcripts and secondary sources of data. During this stage, the researcher began arranging data in a purposeful and structured manner. According to Strauss and Corbin (1998), coding reduces large amounts of data into tiny meaning units. Open coding was employed, with codes being generated, refined, and adjusted as the researcher progressed through the coding procedure. For Step 3, the researcher searched for themes. Braun and Clarke (2006), as referenced by Maguire and Delahunt (2017), suggest that there are no rigid criteria telling what constitutes a theme; rather, a theme is distinguished by its importance. The researcher evaluated, modified, and developed the preliminary themes identified in Step 3. For Step 4, all data that were relevant to each theme were gathered in this phase. In Step 5, the researcher established themes, during which the final clarification of themes aimed to identify the core essence of each theme (Braun & Clarke, 2006, p.92). For the last step, the researcher wrote and reported the themes.

RESULTS AND DISCUSSION

In this part, the results of the study are presented and discussed concerning the aim of the study which is to evaluate the implementation of blended learning modality.

Component A - The Participants

The student participants of the study were randomly selected from Grades 7 – 10 levels through number-generating software. With the help of class advisers in each section, they were followed up after having been randomly selected. These students have been the recipients in the implementation of blended learning set up which features a four-day on-site reporting and one-day online learning. During this research, these students were currently enrolled in their grade level. One hundred ninety-one students (191) accepted the invitation to participate in the study, however, only 189 responses were considered valid. The table below shows the demographic profile of student-respondents pertaining to grade level.

Table 1. Demographic Profile of the Respondents

Category Students' Grade Level	Frequency	Percentage
7	49	25.93
8	45	23.81
9	48	25.39
10	47	24.87
N	189	100

Moreover, the forty-three (43) teachers from the nine (9) subject areas, namely, Chinese, Filipino, Mathematics, English, Science, Catholic Life Formation, Social Studies, Technology and Livelihood Education, Music, Arts, Physical Education, and Health became the secondary sources of data who are also vital

instruments in the implementation of the program.

The table below presents the intents and the actualities of the participants of the program. Document review was used to identify the intents and actualities.

Table 2. Intents and Actualities

Intents	Actualities	Congruence/Discrepancy
Learners are adaptive to both online and face-to-face set up.	All students are traditional classroom learners	Not all students are adaptive to both online and face-to face set up
Teachers create a blended learning environment	Teachers design lessons either in face-to-face or synchronous and asynchronous format	Extent on teacher's implementation of the blended lesson format

Intent 1. Learners are adaptive to both online and face-to-face setup. One of the characteristics of blended learning modality is that it combines some form of online and on-site learning. The combination of both is what the learners should be able to adapt. In reality, students are traditional classroom learners, wherein they were used to receiving instruction and learning with others in the physical classroom. One discrepancy noted here was that students were not adaptive to the combination of both setups. What was new to them was the conduct of online instruction using the learning management system. Given the combination of on-site learning, the learners should be able to adapt to reporting schedules when needed to do so in school. The online environment might pose difficulties, as students may require assistance in evaluating online resources, identifying best materials, and putting up comprehensive reports and projects, which often involve independent

learning (Nomadic Child Theme, 2023).

This observation highlights the importance of considering students' adaptability when designing blended learning initiatives. While learners may be familiar with face-to-face instruction, they may require support and guidance to effectively course online resources, evaluate information, and complete assignment independently (Basar et al., 2021). Additionally, the integration of reporting schedules and academic requirements from both online and on-site learning components adds complexity to students' learning experiences, requiring clear communication and guidance from teachers (Chandan, 2021).

By recognizing and addressing learners' challenges in adapting to blended learning environments, teachers can implement targeted interventions to support students' transition and foster their success in hybrid educational settings. Providing training on digital literacy skills,

offering access to technical support resources, and promoting self-directed learning strategies are essential components of ensuring learners' adaptability and engagement in blended learning modalities.

Intent 2. Teachers create a blended learning environment. This suggests that every teacher is involved in developing and implementing a combination of in-person and online learning experiences for their students. Creating a blended learning environment involves integrating various elements to enhance the learning process. This may include utilizing online resources, such as educational websites, virtual simulations, or interactive learning platforms, alongside traditional classroom instruction. Through the integration of digital tools and technologies, teachers can provide a more interactive and customized learning experience, tailored to meet the varied needs and preferences of their students. In practice, teachers

develop lesson plans tailored to either face-to-face or synchronous and asynchronous formats, accommodating a schedule of four days of in-person instruction and one day on-site. An intriguing aspect to consider is the prevalence of integrating a blend of lesson formats rather than treating them separately (Lebbe, 2017). This means the varied nature of teacher involvement in blended learning implementation and highlights the importance of examining the depth of integration between online and in-person instructional components within educational contexts.

Component B – The Program

This component talks about the content, operations, and processes of blended learning modality. Table 3 presents the intents, actualities and congruence/discrepancy of blended learning modality.

Table 3. Blended Learning Modality (Program)

Intents	Actualities	Congruence/Discrepancy
Content unutilized for both face-to-face and online learning is interconnected and aims to achieve same learning objectives with consistent material	Lesson design is tailored-fit for face-to-face interaction and synchronous or asynchronous tasks	Balance between face-to-face and online components
Use of educational of apps and web-based resources for teaching and learning	Integration of web-based learning resources and activities into the lesson	Extent on the use of web-based learning resources
Three days of in-person classes and two days of distance learning (modular, online, or television/ radio-based instruction) (D.O. No. 44)	Four days on-site, one day online either synchronous or asynchronous mode	Some online schedules are not followed

Intent 1. The content for both in-person and online learning is integrated and is utilized to achieve the same learning outcomes. When content for both in-person and online learning is integrated and aligned, it means that educational materials, resources, and learning activities used in both modes of instruction are designed to complement each other and contribute to achieving the same

learning outcomes. By ensuring that the content used in both in-person and online learning is aligned, teachers aim to provide a consistent and cohesive learning experience for their students, regardless of the mode of instruction. The content may be presented in different formats or platforms to suit the specific needs and requirements of each learning environment, but the core concepts, skills, and knowledge remain

the same. Although the presentation format may vary between face-to-face and online settings, the underlying learning objectives remain interconnected, reinforcing students' understanding of the lesson content (Dziuban, et al., 2018). In the actual sense, teachers in the different subject areas design lessons for face-to-face instruction and synchronous or asynchronous modes. For example, as mentioned by one of the Science teachers, a science lesson on a cycle used a combination of in-person demonstrations, hands-on experiments, and discussions in the classroom, while also providing online resources such as interactive diagrams, videos, and online quizzes for students to explore outside the classroom. The content covered in both settings would be interconnected and reinforce the same learning objectives related to understanding the cycle.

This implies that regardless of the mode of instruction used whether online or in-person, the desired learning outcome remains the same. This also means the significance of content integration in facilitating seamless transitions between in-person and online learning environments, maximizing the effectiveness of blended learning approaches.

Intent 2. The use of educational apps and web-based resources for teaching and learning. The use of educational apps and web-based resources refers to the incorporation of digital tools and online platforms in teaching and learning process. These tools are specifically designed to enhance educational experiences, provide interactive learning opportunities, and support students' understanding of various subjects. Incorporating educational apps and web-based resources in teaching and learning provides a rich and dynamic learning environment. It empowers students to take an active role in their education, fosters engagement and creativity, and expands access to educational content beyond traditional classroom boundaries. This is evident among teachers as they are integrating web-based learning resources into the lesson such as Padlet, Mentimeter, poll everywhere, Kahoot, nearpod, desmos, quizziz, google forms, ms forms, and the like.

The use of these educational apps and web-based learning resources implies that the learning experience of students is enriched and it has the potential to bring real-world experiences into the blended learning environment. Although the teachers are constantly using this, the measures on the extent of the usage of these web-based resources may be challenging to monitor especially in terms of their alignment with learning goals, their usefulness in building upon knowledge and skills that students have already learned in class, and their connection to the real world.

Intent 3. Three days of in-person classes and two days of distance learning. As an option provided by the Department of Education, private schools have the decision to go for the blended learning modality. The adjustment to four days in-person and one day online was the one followed and implemented. This reflects the adaptability and flexibility inherent in blended learning models, particularly in response to external factors such as the COVID-19 pandemic (Hodges et al., 2020). Target online days for the school year were 72 online days while only 21 days were followed with a gap of 51. A few of the reasons captured were the change of online days to on-site due to student formation activities or curricular-related events. This highlights challenges in maintaining consistency and adherence to the proposed schedule and practical complexities of implementing blended learning initiatives within the constraints of school calendars and extracurricular commitments.

This analysis emphasizes the importance of flexibility and adaptability in blended learning implementation, while also acknowledging the need for strategies to address logistical challenges and ensure the smooth integration of in-person and online learning components.

Component C – Effects

This section discusses the Component C of the ABCD model which is about the effects of the program on the trainees, students, or participants, in which this case, the effects of Blended Learning Modality on the students. Three effects are taken into consideration such

as learner satisfaction, learner engagement, and academic performance of the students.

Learner Satisfaction. Student satisfaction, unlike attendance and assessment data, cannot be quantified solely through objective metrics. Therefore, it holds significance as it reflects students' experiences of the course. The data on learner satisfaction using the questionnaire

“Hexagonal E-Learning Assessment Model” (HELAM) is presented below. It is presented according to the various categories or dimensions, namely supportive issues, learner perspective, instructor attitudes, technical quality, information (content) quality, and service quality, respectively (Ozkan, 2008).

Table 4. Learner Satisfaction

Components	Weighted Mean	Median	Verbal Description
Supportive Factors	3.01	3	Satisfied
Learner Perspective	2.95	3	Satisfied
Instructor Attitudes	3.07	3	Satisfied
System Quality	3.06	3	Satisfied
Information (Content) Quality	3.08	3	Satisfied
Service Quality	3.21	3	Satisfied
Average	3.06	3	Satisfied

Note. n= 189 *Legend: 3.25–4.00–Very satisfied, 2.50–3.24–Satisfied, 1.75–2.49–Dissatisfied, 1.00–1.74–Very dissatisfied

As shown in Table 4, the results indicate that Service Quality got a weighted mean of 3.21 (Satisfied) which is the highest among the six. The other components, Supportive Factors (3.01), Learner perspective (2.95), Instructor Attitudes (3.07), System Quality (3.06), and Information (Content) Quality (3.08), though have different weighted means, they fall within the Satisfied range. The “Service Quality” component means that the learners are satisfied with the teachers’ attitudes towards them and their knowledge of content and with the services provided by the administration.

Overall, the average weighted mean for the six categories is 3.06 which falls within the Satisfied range. This means that the perceived learner satisfaction with the use of LMS is evident. This is supported in the comments of students, “*Ms Teams is definitely a helpful learning tool because of how you can see everything compiled and organized already*” and “*Using the LMS is good as it helps students learn even when they are not on-site.*” Students find the LMS to be an effective learning tool, which increases their overall satisfaction with the blended learning environment. Dugyu et al. (2018) support this assertion, indicating that students tend to experience satisfaction when they perceive that learning resources, facilities,

systems, and administrative support provided through LMS effectively contribute to achieving learning outcomes. Hence, the high levels of satisfaction reported in this study means the importance of effective utilization of LMS platforms in enhancing the overall blended learning experience.

While the previous analysis highlighted positive perception of learner satisfaction with the use of LMS, it is notable to acknowledge studies that present contrasting findings. For instance, a study by Akyol and Garrison (2011) examined learner satisfaction with LMS in blended learning environments and found that while students appreciated the flexibility and convenience offered by online components, they also expressed frustrations with technical issues, lack of interactivity, and limited instructor presence. While students may appreciate certain aspects of online learning, they may also experience challenges and limitations that impact their overall satisfaction. Therefore, it is essential for educators and institutions to address these concerns and strive to enhance the effectiveness and usability of LMS platforms to better meet the diverse needs and preferences of learners. Because if the level of satisfaction is high, students continue to use the LMS.

Student Engagement. Engagement is "more than involvement or participation; it requires emotions and meaning-making in addition to action" (Trowler, 2010). Data below are presented in terms of the three elements of engagement: behavioral, emotional, and cognitive.

Table 5. Student Engagement

Elements	Weighted	Verbal
	Mean	Description
Behavioral	2.69	Agree
Emotional	2.87	Agree
Cognitive	2.86	Agree
Average	2.81	Agree

Note. n= 189 *Legend: 3.25–4.00– Strongly agree, 2.50–3.24– Agree, 1.75–2.49- Disagree, 1.00–1.74– Strongly disagree

As seen in Table 5, the Emotional and Cognitive elements have a weighted mean of 2.87 (Agree) and 2.86 respectively. For the Emotional aspect, this means that the learners feel that the classroom is a fun place to be for learning. Students also feel happy to be in school. Conversely, the Cognitive element denotes students’ use of deep or surface-learning strategies such that when an unfamiliar word is encountered upon reading, students do something to figure it out, or when something is not understood in the reading, students go back and read it over again for understanding. The Behavioral element means students’ actions in school such as following rules and paying attention to class.

Overall, the weighted average for the three elements, Behavioral, Emotional, and Cognitive is 2.81 (Agree). This means that the engagement of students is high in terms of their experiences and learning in class. This finding aligns with Christenson et al.'s (2012) definition of student

engagement, which emphasizes students' active involvement, persistence, and enjoyment in learning activities. By exhibiting behaviors indicative of active engagement, such as exerting effort, self-regulating behavior, and enjoying learning challenges, students demonstrate a deep level of investment in their academic pursuits.

Although this finding highlight positive perceptions of learner engagement with the use of LMS, it is important to consider studies that present contrasting findings. For example, a study by Means et al. (2014) found that while some students appreciate the convenience and flexibility of accessing course materials online, others reported feelings of isolation and disconnection from peers and instructors in online learning environments. Similarly, a study by Martin et al. (2017) explored student perceptions of engagement in online courses and found that while some students found the online format conducive to deep learning and critical thinking, others expressed frustration with the lack of personal interaction and support from instructors. These studies suggest that while LMS platforms offer benefits in terms of accessibility and convenience, they may also present challenges related to fostering meaningful engagement and interaction among learners. Therefore, it is important for educators and institutions to be mindful of these potential barriers and actively work to mitigate them through strategies such as promoting social presence, providing timely feedback, and fostering a sense of community in online learning environments.

Academic Performance. The general point average describes the academic performance of the students. It is the general average taken from the nine (9) subjects.

Table 6. Students’ Academic Performance

Grade Category	School Year	Frequency	Percentage	School Year	Frequency	Percentage
95 – 100		58	30.68		32	16.93
90 - 94	2021- 2022	92	48.68	2022-	82	43.39
85 - 89		34	17.99	2023	60	31.75
80 - 84		5	2.65		15	7.94
75 - 79		0	0		0	0
N		189	100		189	100

Note. n= 189 *Legend: 95 – 100 – Excellent, 90 – 94 – Advanced, 85 – 89 – Proficient, 80 – 84 – Developing, 75 – 79 – Beginning

Table 6 reflects that most of the students (92 and 82) got an average of 90 – 94 (48.68% and 43.39%) while 2.65% (5) and 7.94% (15) fall under the range 80 – 84. This means that most of the student's academic performance level is interpreted as Advanced while a few are interpreted as Developing. The advanced level implies that the learner demonstrates strong performance and evidence of learning. In this level, the student has acquired foundational knowledge, skills, and essential understandings, capable of applying them through real-world performance tasks (DepEd Memorandum, No. 158, s. 2011). In the study of Kiviniemi (2014), one of the several interesting aspects of effectiveness using a blended approach was that student outcomes in both exam performance and overall course performance were higher under

the blended learning approach. Kenney and Newcombe (2011), who compared blended learning and non-blended learning environments to determine effectiveness based on grades, found that blended learning had a higher average score.

Difference between two groups of academic performance of students. To make comparisons between these two groups, representative values of these distributions are compared. Based on the principle of the central limit theorem, it is assumed that data is normally distributed.

The table below presents the paired samples t-test of the mean academic performance of students for two school years under the blended learning modality.

Table 7. Paired Samples T-Test

Mean	Mean	Statistic	P
GPA 2021-2022	GPA 2022-2023	Student's t	8.71
92.1	90.6		< .001

The comparison of mean academic performance between two school years under the blended learning modality, as presented in Table 7, reveals an interesting trend. As seen in the table, the mean academic performance of the previous school year is higher than the current school year. The paired t-test result with a t statistic of 8.71 and a p-value of <.001 indicates a statistically significant difference in the academic performance of the students. It is significant to note that there may be other factors that contributed to students' achievement. Distribution of online and face-to-face classes varied between the school years 2021-2022 and the present. During online classes, students may receive assistance from individuals at home, suggesting a potential influence on their academic performance and learning experiences. Parental involvement during online days may have contributed to the achievement of the students. Additionally, the observed increase in parental involvement during online learning days may have contributed to students' academic achievements, aligning with previous studies highlighting the positive impact of parental

support on student learning outcomes (Qasim et al., 2022; Khan et al., 2019).

These findings emphasize the interplay of instructional modalities, environmental factors, and parental involvement in shaping students' academic performance within blended learning environments. While the current study highlights a decline in academic performance over time, further research is needed to explore the multifaceted dynamics influencing students' learning experiences and outcomes in blended learning settings.

Component D - Impact

Component D of the ABCD Model discusses the social impact of the program. In this case, it will focus on the effect of the Blended Learning Modality on the parents as stakeholders. One of the missions of the Department of Education states that "Family, community, and other stakeholders actively participate and partake in the development of lifelong learners." As parents, it is important to build strong support and establish collaboration with the school in the education of their children. Education is a three-

way street that involves not only students and educators but families as well (Acer, 2020).

Theme 1. BL setup gives more family time.

This theme speaks of the impact of the BL setup in terms of the one-day online that is spent remotely or most of the time at home. Most parents think that the one-day online is a time for their sons or daughters to be at home and take a "day off" from the physical classroom as reflected in the following statements:

"More time spent with my child" – P9

"More time at home" – P6

"More family time" – P4

"...spend more time with the kid." – P7

While parents observe their children participating in synchronous classes or engaging in asynchronous learning tasks without the requirement for immediate submission or direct interaction with teachers, parents view their children's presence at home as a chance for heightened familial bonding and enhanced quality time. This observation highlights the broader social implications of blended learning beyond academic outcomes, as it provides families with additional opportunities for shared experiences, conversations, and support (Vandermaas-Peeler et al., 2020). Moreover, the flexibility afforded by asynchronous learning tasks may allow families to engage in leisure activities or pursue shared interests together, further enhancing the overall quality of family life (Dearing et al., 2005).

Theme 2. It is cost-efficient. One emerging theme on the social impact of BL is cost efficiency which means that there are no travel costs incurred and money allowance for students involved. Parents expressed their opinions:

"... Also very cost-effective for us since it gives us a day off from travel cost." – P10

"...it saves money and time." – P1

"...saves on travel cost." – P6

This means that parents are aware of its benefits in terms of cutting or reducing expenses on transportation going to and from school as well as financial allowance for students for snacks and lunch. These financial savings can alleviate financial strain on families and

contribute to overall economic well-being, particularly for households facing socioeconomic challenges. Moreover, the reported findings align with broader trends observed in research and media reports. For example, CNN (2021) highlighted that a significant proportion of respondents reported lower education expenses under blended learning arrangements, aligning with parents' perceptions of cost savings associated with this educational model.

Theme 3. It reduces stress. This theme portrays the impact of BL on students as observed by the parents that it can lessen stress. Because students stay at home mostly for online sessions and classes can be accessed anywhere, parents find it as a way of reducing stress in their daily regimen. As an explanation for this, they mentioned in their comments:

"The kids can take a rest from commuting daily as well as the parents during the online class. And it is scheduled during Fridays which makes sense since most of the parents are tired from work for the whole week." – P3

"Less stressful and more convenient" – P1

"I think it is great because it gives them a breather. It allows them to also make up for missed work. Also for student-athletes, it is a very good arrangement as the kids don't have to rush to school once a week and they can rest well during break times." – P5

"Blended learning, as I observed, lessens the stress of waking up very early after a long night of doing homework/studying. Hence, my son is more attentive and keen on doing schoolwork online." – P8

"My child has more days to relax if blended schedule." – P1

"The students can rest after the online class." – P4

In this case, parents see the one-day online as a hiatus from the four-day on-site reporting to school and complement this as a breather for their

sons or daughters. Recent research suggests that breaks and periods of rest are essential for cognitive processing and helping make sense of experiences, contributing to overall well-being and academic success (Terrada, 2018). Thus, the blended learning environment does not only reduce stress but also support students' cognitive functioning and mental health by fostering a balanced approach to learning and relaxation (Mintbook, 2021). Overall, this theme focuses the importance of considering the psychological impact of educational practices on students and highlights the potential for blended learning to promote holistic well-being and academic success.

Theme 4. It is manageable for the student (son or daughter) to follow his or her schedule. This theme describes the parents' observation of how manageable the online schedule is for their children. Most of them claim that it is manageable for their sons or daughters to follow the online schedule.

“My daughter can manage her tasks may it be on-site or online.” –P4

“Flexibility for the kids to manage on their own the school routine (on line)” –P7

“The schedule is manageable. We are okay with the 4 days on-site and one day online.” –P6

“It teaches the students time management and allows them to focus on offline tasks completion.” –P4

“Students would be able to learn how to manage his or her time. They will learn the importance of discipline - hence, prioritizing the urgent and important.” –P3

Blended learning provides students with opportunities to develop crucial time management and self-discipline skills, as they learn between on-site and online learning modalities. By allowing students to independently manage their learning tasks and prioritize their responsibilities, blended learning fosters a sense of ownership and accountability for their academic success (UNESCO, 2021). Moreover, the ability to balance online and offline tasks promotes a

holistic approach to learning, enabling students to engage with course materials at their own pace and in a manner that suits their individual learning styles. The favorable response from parents regarding the continuation of blended learning in the preceding school year, as indicated by the weighted mean of 4.02, means the perceived effectiveness of this educational model in promoting student manageability and autonomy (McCarthy, 2018).

Theme 5. Monitoring of children during online setup becomes a challenge. This theme describes the experience of parents when students are in the online setup. The majority of the parents (61.53%) spend with their children doing online work in less than an hour while a few of them (3.21% and 9.62%) can monitor for four hours and beyond. This means that the majority of them can only spend time with their children doing online work in less than an hour. One significant reason that surfaced among parents in the open-ended statements was because of their work that they needed to attend to. This is evidenced in the thoughts expressed below:

“...since we're both working parents, no one can assist him.” –P1

“Students can tend to be super relaxed most especially if he or she is not being closely monitored by their respective parents/guardians.” –P9

“Following up students during online learning” For working parents, there's always an uncertainty if the online class for the day is productive, as no one is able to check what has been accomplished at the end of day.” –P5

The findings align with previous research indicating that a substantial proportion of parents struggle to monitor their children's attention and task completion during online classes (Ribeiro et al., 2021). Monitoring though becomes a challenge among parents but the placement of trust for their children and the confidence that the students can tackle an online day's work is evident. However, the extent of parental involvement in monitoring online learning

activities may vary depending on factors such as the age of the children and their educational background. This theme stresses the importance of addressing the logistical and practical challenges associated with parental monitoring of online learning, particularly for working parents. Strategies to support parental engagement and involvement in online learning, such as providing clear communication channels and resources for parents, may help lessen some of these challenges and enhance the overall effectiveness of blended learning initiatives.

Theme 6. **Unpredictable changes in schedules may affect family plans.** This highlights the challenges families face when confronted with unpredictable changes in schedules within the blended learning framework. According to some parents, this gives an impact in terms of their work schedules, sending and fetching children to and from school, and planned family getaways in anticipation of the weekend. Some noteworthy ideas from parents are indicated below:

“Our challenge is if there are short notice changes on the calendar of activities. For example, students are asked to go on-site and we have already planned a Friday away-from-home weekend travel. Could have planned or informed students for changes at least a week prior.” – P3

“If a student has siblings who don't have the same online schedule, parents need to adhere to varying students' schedule.” – P7

“Synchronization of schedules with our grade school level daughter.” – P4

“I think the challenge only arises when there is more than one child going to school and their schedule for the online schooling doesn't match.” – P10

“Students were required to go on-site many times even if it's their online schedule and different online schedule among siblings.” – P9

“...sudden changes of schedules that usually affect my schedule as well.” – P1

“...the unpredictability of the schedule.” – P2

Parents express concerns about the impact of sudden shifts from online to on-site reporting on their work schedules, transportation arrangements, and planned family activities. Parents with multiple children attending school may find it particularly challenging to manage conflicting schedules and accommodate last-minute adjustments, highlighting the need for greater coordination and flexibility (Easy School Marketing, 2023).

In response to these challenges, schools must prioritize effective communication and transparency in scheduling practices, providing parents with sufficient notice and information to plan and adapt to changes. By establishing clear communication channels and adhering to consistent scheduling practices, schools can mitigate the impact of unpredictable changes on families and promote greater stability and predictability within the blended learning environment.

Overall, the impact of blended learning modality on families provide valuable insights into the various effects of this educational approach. Blended learning does not only allow for increased family time, potentially fostering stronger familial bonds and relationships, but also offers cost efficiency by reducing expenses associated with daily commuting and school-related allowances. Additionally, the flexibility of blended learning may contribute to stress reduction for both students and parents, as it allows for greater autonomy in managing schedules and learning tasks. However, challenges arise in monitoring children during online sessions, highlighting the need for effective communication and support systems to address these concerns. Furthermore, unpredictable changes in schedules may disrupt family plans, highlighting the importance of clear communication and coordination between schools and families to mitigate such disruptions.

CONCLUSION

This study has provided insights into the implementation and effects of blended learning modality, emphasizing the importance of addressing challenges and maximizing the benefits of this educational approach. First, by recognizing learners' challenges and the complex nature of teacher involvement, targeted interventions can be implemented to support students' transition and success in hybrid educational settings. Second, regardless of the mode of instruction, the integration of content remains significant for facilitating seamless transitions between in-person and online learning environments. However, monitoring the usage of web-based resources and ensuring alignment with learning goals can pose challenges. Third, addressing learner satisfaction, engagement, and academic performance are essential for optimizing the effectiveness of blended learning. Educators and institutions must strive to enhance the usability of learning management systems and mitigate barriers to engagement. Finally, the study highlights the broader impact of blended learning on family dynamics, cost-efficiency, stress reduction, schedule management, and challenges in monitoring children during online sessions.

To address these issues, the following recommendations may be done to enhance the continuous implementation of the blended learning modality:

1. Enhancing the usability of learning management systems
2. Promoting social presence and community in online environments
3. Conducting further research to explore the dynamics influencing students' learning experiences and outcomes in blended learning settings
4. Effective communication and coordination between schools and families are vital for addressing challenges such as unpredictable changes in schedules and ensuring a smooth transition to blended learning environments.

By implementing these recommendations, educators and institutions can optimize the benefits of blended learning while addressing challenges to promote student success and well-being.

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