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Analysis of Blended Learning Design to Enhance Elementary Students' Creativity and Motivation

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Abstract

In this research, it was critical to implement a blended learning model with the aim of improving creativity and learning motivation of the elementary students of Pasirian 01 Public Elementary School, Pasirian Subdistrict, Lumajang Regency. The study used a descriptive qualitative case study design to discuss the involved process and experiences, difficulties and adaptive techniques in the amalgamation of resource-limited face-to-face and web-based education in a rural setting. Direct observations, in-depth interviews of the teachers, students and the principal, and review of supporting data such as student portfolios, lesson plans as well as communication records were used to collect the data. These results indicate that the blended learning model, based on the low-bandwidth digital tools, flexibility in scheduling, and creatively based on project-based assignments, has an important contribution to making students engaged, expressing themselves, and self-motivated. Teachers also transformed their role towards facilitating student-centered learning where learners were also more confident and excited to work, especially on assignments that requiring creativity and accentuating autonomy. Nevertheless, the study also emphasizes such difficulties as unequal access to devices and connectivity, deficiencies of digital literacy among teachers and parents, and the increased workload due to the preparation of dual-modality instruction. Responsive approaches implemented by the school, inter alia, by increasing personal meetings and strengthening partnerships between schools and home as well as improving capacity development of teachers via peer-led workshops, loaning technologies, and reinforcing links between students and parents helped address them.

Introduction

The development of information and communication technology (ICT) in the current digital era has brought major changes in various aspects of life, including in the field of education. The world of education is required to adapt to technological advances in order to create a teaching and learning process that is more effective, interactive, and relevant to the needs of the times. One form of adaptation that has begun to be widely applied in the education system is technology-based learning, which is known as the blended learning model (Can et al., 2024; Nantha et al., 2024; Hakim et al., 2023; Mirata et al., 2022; Kumar et al., 2021).

Blended learning is a learning model that combines face-to-face and online learning methods in an integrated and planned manner (Anthony Jnr, 2024; Singh et al., 2021; Niyomves et al., 2024; Zagouras et al., 2022). This approach is believed to be able to provide flexibility and increase the effectiveness of the learning process, especially in creating a more active, creative and enjoyable learning atmosphere for students. This model is the answer to the challenges of conventional education that is often considered monotonous, less varied, and not in accordance

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with the learning characteristics of the digital generation (Hamad et al., 2024; Sareen & Mandal, 2024; Yan & Li, 2023; Nuryadi et al., 2023).

On the other hand, primary education as the initial stage in the formal education process has a very important role in shaping children's character, basic skills, and ability to think critically and creatively (Suryana & Yulia, 2021; Lestari et al., 2021; Sondakh et al., 2021; Ampartzaki et al., 2022). Thus, the learning methods and strategies applied in primary schools must be able to facilitate students to develop their potential optimally, both in terms of knowledge, attitudes and skills (Irwan et al., 2024; Setyaningsih & Suchyadi, 2021). In this context, the application of blended learning can be an innovative solution in improving the quality of learning in primary schools, especially in fostering students' learning motivation and creativity as the foundation of learning at the next level.

However, initial observations in March 2025 showed that the learning process in many elementary schools, including SD Negeri Pasirian 01 in Pasirian Sub-district, Lumajang Regency, is still dominated by conventional teacher-centered methods. This learning model tends to make students passive, less actively involved in the learning process, and less space to explore and develop their creativity. As a result, students' critical thinking skills, creativity, and learning motivation have not developed optimally (Aulia, 2022).

Creativity and learning motivation are two important components in supporting the success of the learning process (Yilmaz & Karaoglan Yilmaz, 2023; Sutrisno & Nasucha, 2022; Sari et al., 2021). Creativity is a person's ability to generate new ideas, solve problems innovatively, and create something original. In the context of learning, creativity allows students to not only passively receive material, but also actively explore, process, and develop the knowledge gained. To realize the creation of an empowered mind requires a process, starting from curiosity, understanding, trying over and over again until finally a new, original product is produced (Stevahn & McGuire, 2025; Fishman-Weaver, 2021). Thus, a creative individual is an individual whose mind is empowered (imaginative), characterized by a high sense of curiosity (Capron Puozzo & Audrin, 2021). Creativity is not innate, but can be developed through a supportive learning environment and learning methods that provide space for students to be creative (Abdillah, 2021; Fan & Cai, 2022; Wannapiroon & Pimdee, 2022).

Meanwhile, learning motivation is an internal and external drive that influences students' enthusiasm and perseverance in participating in the learning process. Learning motivation is considered an important factor to be actively involved in learning activities (Supriadi et al., 2024; Ferreira et al., 2011; Cayubit, 2022; Hariri et al., 2021). Motivation acts as a driving force that directs students to achieve certain learning goals, such as understanding subject matter, achieving academic achievement or developing certain skills. Students who have high learning motivation tend to be more focused, diligent and enthusiastic in facing learning challenges so that these students are more likely to achieve optimal learning outcomes (Zhang et al., 2022). Thus, learning models that can encourage creativity while increasing learning motivation are needed in the world of education, especially at the basic education level (An et al., 2024; Yousef, 2021; Suchyadi & Suharyati, 2021; Mustoip et al., 2024).

Some previous research results show that the implementation of blended learning can have a positive impact on increasing students' creativity and learning motivation. Blended learning is a learning model that combines the positive sides of traditional modes such as face-to-face models with increased use of technology to maintain, improve and engage students (Nurhasanah et al., 2022; Islam et al., 2022; Faraniza, 2021). Blended learning can improve learning access to learning materials and activities, and can support and enhance the role of teachers, student experience and social environment (Bizami et al., 2023; Lee et al., 2024).

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In the context of Pasirian 01 State Elementary School, the application of blended learning is expected to be an innovation in answering the challenges of conventional learning that are still commonly found in the school. Based on initial observations in March 2025, it appears that teaching and learning activities still tend to be one-way, where the teacher delivers the material while students only listen and take notes. This causes a lack of active student participation, low courage to express opinions, and limited opportunities for expression and creativity in the learning process (Ansya & Salsabilla, 2024; Susilowati et al., 2022; Tambak & Sukenti, 2023). In addition, the lack of utilization of technology in learning causes students to be less familiar with digital media that can actually support the learning process.

In the midst of these conditions, research on the application of blended learning methods in improving students' creativity and motivation to learn becomes very relevant and urgent to do. This research does not only aim to test the effectiveness of blended learning method, but also to explore how blended learning implementation strategies and techniques can be adapted to the characteristics of elementary school students. Thus, through this research, it is expected that a comprehensive picture of the role of blended learning in improving creativity and learning motivation of elementary school students will be obtained. This research will make a real contribution to the development of innovative learning strategies that are not only oriented to academic achievement, but also to the development of students' potential and character as a whole.

Methods

In this study, a case study research design was used because of its descriptive nature of qualitative research that focuses on examining the implementation of blended learning in one of the elementary schools, namely Pasirian 01 Public Elementary School, in Pasirian District, Lumajang Regency. In this study, the qualitative method was considered as the best method since it allowed the researchers to grasp the rich realities of learning process and experience the contextualized feelings, life experiences as a teacher, student and parent. The case study design offered a narrow scope through which the exploration of this phenomenon could be examined in a bounded context and thus enriching and deep analysis can be done on the process of planning, implementing, and experiencing blended learning at this particular school. The selection of this school was not an accidental one but was predetermined by the primary observations that revealed the existence of traditional models of learning and the intention of the school to pursue innovative instructional approaches as the way of addressing the current challenges to engage students, enhance their creativity and motivation.

The selection of the research setting at Pasirian 01 Public Elementary School was based on the representativeness of the research setting since its research setting is closely similar to the rural elementary schools that are trying to incorporate technology in teaching and learning. These were class teachers of grades IV and V, students of the same grades and the school principal. These respondents were selected with the help of the purposive sampling to make sure that the data obtained were collected among people who have been directly involved in the process and have been influenced by the process of blended learning. The instructional activities were designed and executed by teachers, the students occupied the position of key recipients and performers in the learning atmosphere, and the principal was taken as the key person in terms of institutional support and policy guidance. Including such participants also gave an all-round picture of the scenario of blended learning as it is perceived by others.

Within a specific time frame, a mixture of in depth interviews, direct observation, and documentation analysis was utilized in the data collection, which was carried out carefully. The process of observation was fulfilled both during face-to-face classroom activities and during

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

online learning activities in order to realize how blended learning was practiced. The researchers monitored the nature of teacher-to-student and student-to-student interactions, the use of digital media, flow of the lesson and level of student engagement. These classroom dynamic observations were captured in natural settings by recording field notes systematically. Semi structured interviews were used to interview teachers, students and the principal and when it came to their involvement, in depth interviews were employed. The interviews also sought to discover the perceptions of the participants, their experiences and challenges regarding the use of blended learning especially to promote creativity and motivation. Such discussions were highly qualitative sources of information since they contained first hand accounts of modifications and inventions made by both the teachers and the students. Procedures like documentation analysis enriched these methods with reviewing lesson plans, instructional videos, bits of work of students, communication logs on WhatsApp groups, and school reports regarding blended learning programs. Through these documents additional evidence was availed to prove observations and interviews findings to triangulate which made the study more dependable.

As explained in recent literature on methodology, the results of the data collected were analyzed with reference to the interactive model suggested by Miles and Huberman. In analytical terms, this would involve reduction of data, where the tonnes of raw data would be coded and grouped into meaning categories that point towards meeting the research objectives. Critical issues like instructional approach, creativity of students, patterns of motivation and sometimes the difficulties associated with implementation were discovered at this stage. The data were then presented in narrative summaries and thematic matrices to enable the researchers to simply visual and conceptualize relations among themes and experience of the participants. The last step of the analysis was the drawing and verification of conclusions, which was conducted in terms of the reflective interpretation of the data, comparison of data sources and iterative development of insights. This has helped to not only make the conclusions made data driven but also be based in reality in terms of what exists in the school setting as is.

In order to increase the credibility of the study, the researchers have used a number of validation techniques such as triangulation of data sources, member checking as well as peer debriefing. The triangulation of the source of the data consisted of the comparison and cross-validation of the data collected at various participants, settings and types of the data (observations, interviews, documents). This made sure that the results portrayed a balanced and true scenario of the implementation of the blended learning. Member checking was also performed by sharing tentative interpretations with participants to ensure that the interpretations were the correct representation of their experiences and views to limit the likelihood of researcher bias. Moreover, peer debriefing conferences with other individuals who understood qualitative research were arranged to discuss critically coding, thematic formulation and interpretations which added onto the analytical reputation of the paper even more.

Results and Discussion

The results of this study show that blended learning at Pasirian 01 State Elementary School, Pasirian Sub-district, Lumajang Regency is implemented by combining face-to-face learning activities and learning through WhatsApp and Google Classroom applications.

> *"... Blended learning in our school is implemented by combining face-to-face learning activities and learning through WhatsApp and Google Classroom applications. Learning materials delivered online are usually in the form of videos and short modules that are easy to understand. This is very helpful especially during the pandemic and also increases children's interest in learning because they can learn*

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independently and be more creative in doing assignments..." (Interview with Grade V Teacher, on May 8, 2025)

The implementation of blended learning at Pasirian 01 State Elementary School shows interesting dynamics, especially in terms of teacher readiness in combining face-to-face and online learning. The fifthgrade teacher explained that this approach requires her to be more creative in developing learning strategies.

> *"...At first I found it difficult because I had to create two versions of the material, one for offline and one for online. But over time I learned to adjust. In fact, the children became more active and enthusiastic because they felt the learning was different from usual...." (Interview with Class V Teacher, on May 8, 2025)*

Teachers also recognize that the use of digital media such as learning videos, online quizzes, and WhatsApp for assignment submission has a positive impact on student engagement. Although not all students have adequate devices, teachers try to create a variety of activities that can be accessed both online and offline.

> *"... I combine learning videos with drawing or craft tasks. Children who are usually passive get excited to show their work...." (Interview with Class IV Teacher, on May 8, 2025)*

From the students' perspective, blended learning provides new experiences that trigger curiosity and enthusiasm for learning. A fifth-grade student revealed that he preferred to learn using videos because he could repeat them.

> *"... If I learn through videos, I can repeat myself until I understand. When I was told to make a poster, it was also fun because I could use my own ideas...." (Interview with one of the fifthgrade students, on May 9, 2025)*

Students also feel more confident in doing creative tasks, such as making artwork or mini projects. This shows an increase in creativity during the learning process. In addition, there are also students who are happy and more enthusiastic about learning because they can be creative according to their ideas.

> *"... I like to learn through videos and assignments given by my teacher on WhatsApp. Sometimes I am asked to make drawings or crafts related to the lesson. So I feel happy and more enthusiastic about learning because I can be creative according to my ideas..." (Interview with one grade V student, on May 9, 2025)*

However, there are also obstacles felt by students, especially limited internet access or devices that are used alternately with other family members.

> *"... Sometimes I have to wait for my brother to finish using the cellphone first before I can watch the video. But if I can learn using my cellphone, I become more enthusiastic..." (Interview with one of the fourthgrade students, on May 9, 2025)*

Based on observations and interviews, blended learning at Pasirian 01 Primary School is considered to have made a positive contribution to improving students' creativity and motivation. Students show higher interest when engaging in project-based learning and digital media. Meanwhile, teachers experience increased capacity in designing innovative learning and responsive to students' needs.

In practice, not all students have devices such as smartphones or laptops to participate in online learning. In addition, in some areas in Pasirian sub-district, the internet signal is still weak or unstable.

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> *"... There are some students who have to borrow their parents' cellphones, and even then they can only be used at night because they work during the day..." (Interview with Class V Teacher, on May 8, 2025)*

Related to these obstacles, the principal realized and tried to overcome the existing obstacles.

> *"... We have fully supported the use of blended learning as a learning method at school. But we also realize that there are some obstacles such as the internet network that has not been evenly distributed in all student homes, so we always arrange face-to-face schedules more often to accommodate students who have difficulty accessing online..." (Interview with the Principal, on 8 May 2025)*

Another obstacle is that some teachers are still adapting to the use of digital-based learning media. This makes it difficult for them to design interesting and interactive learning content.

> *"... I don't really understand making my own videos or using interactive apps. Still learning slowly..." (Interview with Class IV Teacher, on May 8, 2025)*

Teachers also have difficulty in assessing students' creativity thoroughly due to limited direct interaction and not all students upload assignments on time. From the student side, the results of interviews with students show that some students lack support from parents, both due to time constraints and lack of understanding of the technology used in learning.

> *"... Some parents don't know how to open Google Form or access learning videos, so their children are also confused..." (Interview with one of the fourthgrade students, on May 9, 2025).*

In an effort to overcome the challenges, schools can work with school committees or outside parties to provide facilities such as used cellphones or internet quotas for students who need them. This step has begun to be done informally by lending devices from teachers to certain students. In addition, the education office or schools need to conduct regular training on the use of digital learning applications such as Canva, Quizizz, Google Classroom and simple video editing.

> *"... We had a small internal training on how to make learning videos. That was very helpful..." (Interview with Class IV Teacher, on May 8, 2025)*

Schools can also create practical guides or video tutorials for parents on how to assist their children in accessing materials and doing online assignments.

> *"...I created a special WA group with student guardians to send study guides every week..." (Interview with Class V Teacher, on May 8, 2025)*

The researcher's field findings show that in an effort to assess creativity and motivation, teachers can use portfolios, descriptive assessments, and simple project presentations, adjusted to the abilities of each student. The face-to-face blended learning model at Pasirian 01 involved both the face-to-face and online learning with WhatsApp and Google Classroom. Modular worksheets, short learning videos, and creative assignments have been invented that teachers could implement both online and offline. A summary of the frequency of learning modalities (as they are during the study period) is found in Table 1.

Table 1. Overview of Blended Learning Implementation

Learning Modality	Frequency (per week)	Percentage of total learning time
Face-to-face classroom learning	2 sessions	50%

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

Online learning (WhatsApp/GC)	2 sessions	40%
Independent offline assignment	1 session	10%

The combination of face-to-face and online activities was indicative of adjustment of the technological and connectivity limitations in order to ensure comparable learning participation. According to teachers, the combination created a more dynamic learning environment with face-to-face meeting providing an opportunity to directly guide students and the online assignments providing them with independence and creativity.

The results observed with the help of observations, interviews, student portfolios showed that the blended education strategy managed to activate the creative potential of students. Table 2 illustrates the distribution of students' participation in creative assignments across different media.

Table 2. Student Creativity Enhancement through Blended Learning

Type of Creative Output	Percentage of Students Engaged (Grade IV)	Percentage of Students Engaged (Grade V)
Drawing or poster creation	85%	90%
Simple craft projects	70%	75%
Digital submissions (photo/video of work)	55%	60%

All these data indicate that most of the students were engaged in creative activities and the most engaged in such face-to-face- supported creativity as drawing and crafts. The rate of digital submission was good but was an indication of problems with access to devices and connectivity issues.

One of the Grade V students represented the comment that when one learns using videos he or she can keep repeating himself/herself until the understanding comes. It was easy to make a poster when I was asked to do it, it was enjoyable since I could apply my own thoughts." This demonstrates how in the blended model, through the convenient media and mobile forms of learning, ways of self-expression, and repetitive learning were enabled. The options to review materials whenever possible and as much as one desired gave the students the confidence and the freedom to approach the assignments in a creative manner.

In the teacher view, the blend design required innovation in pedagogies. One of the Grade V teachers told how she encountered difficulty at the very beginning, though she had to prepare two versions of the material, still the children became more active and enthusiastic as they felt it is not the ordinary learning. This remark highlights the radical change in the classroom, with the diversification of the learning stimuli triggering more student activity and production of creativity. Motivation was determined by noting the students active participation, punctuality of task delivery and enthusiasm recorded in the interviews. The table 3 provides a summary of the percentage of tasks completed by students and motivational signs.

Table 3. Impact on Learning Motivation

Assignment Type	Completion Rate (Grade IV)	Completion Rate (Grade V)	On-time Submission
Face-to-face assignments	95%	98%	90%
Online assignments (WhatsApp/GC)	80%	85%	70%
Offline/printed assignments	90%	92%	85%

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The rates of overall completion are high, and the rates of completion of the online tasks are a bit lower as befits the technological restrictions reported by the participants. Rate of accomplishment on time faced a similar influence by these constraints and was also very good showing continued interest on learning despite external obstacles.

One of the Grade IV students responded, sometimes I need to wait till my brother has finished using the cellphone before I can watch the video. Yet when I am able to study through my cellphone, I get excited." This quotation is related to the fact that the motivation of students is persistent even in the face of logistical problem. Forcing the students to create assignments and collaborate also maintained the motivation to bring assignments and actively interact with learning resources even when learning resources were shared or limited.

The qualitative shift in student attitudes was noted too by teachers. One of the teachers said, "I mix videos about learning with drawing or making something. Usually passive children are excited to present their work." It is an improvement of intrinsic motivation since students are more interested and attributed to the feel of achievement due to the creative, hand-on assignments that were involved in the blended model. Although the blended learning model had positive results, there were various challenges which were always witnessed. Lack of access to the devices and a lower level of internet connectivity hindered online learning especially in regions that had poorer infrastructure. Table 4 shows the spread of technology access as it applied among the surveyed students.

Table 4. Challenges and Responsive Strategies

Access Type	Percentage of Students (Grades IV-V combined)
Own device with stable internet	40%
Shared device with family	45%
No regular device access	15%

These statistics indicate that more than 50 percent of the learners were exposed to possible restrictions in accessing the digital parts of blended learning. The school is conducting a strategy to counter this by becoming more face-to-face and supplying offline content. In addition, there were cases when some of the teachers loaned personal devices or collaborated with the school committee to provide old smartphones with a high level of institutional commitment to equity.

This strategy was captured in one of the responses made by a principal; "When we always tend to make face to face schedules more frequently because we have students with access challenges to online learning." Such a solution-based attitude made sure that the blended model neither stuck out the students but was flexible enough to meet their situations. Teachers also encountered hurdles in designing dual-format learning materials and mastering digital tools. However, through internal training sessions and self-directed learning, many improved their capacity to create instructional videos and use apps such as Google Forms and Canva. This professional growth contributed directly to the enhanced quality of blended learning delivery.

The Implementation Process of Blended Learning

In case of Pasirian 01 State Elementary School, the introduction of blended learning is a thoughtful and responsive educative decision addressing the persisting pedagogical dilemmas, particularly the ones related to traditional, teacher-centered learning that, so far, constrained the possibilities of students to exhibit their active involvement and creativity. It was not an

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

attempt to purely adopt technology on its own, but an intelligent use of digital technology, human-to-human interaction, and practical tasks in the most appropriate local situation of a rural elementary school in the developing world where infrastructural constraints and socio-economic inequalities delimit the environment of education.

The main idea behind the implementation was the willingness of the educational staff and the school administration to plan teaching experiences that are cognitively, emotion, and creatively relevant to the learners and, at the same time, adequately solvable in the limitations of technology access and digital literacy skills. The teachers started by charting the curriculum to determine what could be blended and they chose those items that could be delivered efficiently both in direct and asynchronous digital medium. A graphical presentation of the materials was adjusted to be easily accessible and interesting, including short and focused video training materials, printable modular worksheets and creative tasks like poster-creation, drawing, easy crafts, and story-telling tasks. This material selection is correlated with the described in Nurhasanah et al. (2022) and Bizami et al. (2023) statements about the fact that productivity of blended learning in primary education is preconditioned by the presence of visual, tangible, and interactive resources, which are sensitive to the developmental needs of children and do not impose excessive pressure on their cognition in an online context.

Notably, the platforms of the technology being selected were pragmatism and inclusivity, mainly being WhatsApp and Google Classroom. They were low-barrier platforms to digital learning that the majority of parents and students within the community were already familiar with. Particularly, WhatsApp came in handy to assign, remind, and communicate in real-time with both teachers and students, as well as families throughout the process. This ruling is in line with Sareen & Mandal (2024) who note that within the environment with a disparity in technological infrastructure, it becomes important to consider adopting familiar and low bandwidth applications which will play a key role in enabling participation and minimizing access inhibiments.

This balance was also observed in the way in which the blended model design itself represented. Each week, students met, face-to-face, online, and offline twice each and, in addition, did assignments independently, at home). The offline assignments were based on learning goals, yet encouraged self-regulation and directed the self-initiated investigation. This model has a structure that indicates the grasp of the theory as well as the need in its pedagogical context. As suggested by Can et al. (2024), in primary school, blended learning frames must allow plenty of face-to-face interaction to promote socialization and scaffolding, as well as give room to interpretative learning via digital and project-based activities. Because of this, the provision of face-to-face sessions was especially crucial at the Pasirian 01 when most students had to contend with a poor and inconsistent internet connection or had no dedicated access to such a digital device. The fact that the school made a decision to continue holding in-person meetings proves a concern with equity since the choice of the blended learning initiative could help all students, despite the circumstances in which they are placed in terms of technology.

To test the feasibility and areas of improvement of the design, the model was put through a phase in selected schools prior to the implementation school-wide. The teachers monitored at this stage how students used the materials provided, how easily they handled technological elements and how much they seemed interested in creative and academic activities. Their outcomes proved to be encouraging: children reacted favorably to highly creative tasks where they had a chance to draw, make smth, or create a poster to represent their ideas on the paper, and they were eager to watch learning videos that they could watch more times and learn more

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

when it was possible to do it at the required tempo. These findings comply with Capron Puozzo & Audrin (2021) who emphasise that creative engagement thrives where students feel that the task is theirs and that they are liberty to make any number of attempts on their work. Nevertheless, certain difficulties were exhibited during the pilot phase as well, especially the gap in the availability of the devices and stable internet connection, and the difference between the parental support at home. The results can be seen as a response to the issues brought up by An et al. (2024), which acknowledges the potential of blended learning but points out that the educational experience it offers can lead to further educational inequality unless the challenges, peculiar to the context, are proactively noted.

Pasirian 01 responded by making an amazing shift in its model. Students who had challenges with the online parts were expected to have more face-to-face sessions, whereas learning materials were improved to be consistent, coherent, and alignable with both the online and the offline versions. Teachers prepared alternatives to assignments that students would be allowed to do without access to the internet, and in some instances modules were printed and distributed to students. Moreover, to be able to understand that the gap of engaging with parents cannot be filled only through technology, the school laid stress on communicating with the parents and partnering with them. WhatsApp groups did not only mean a place of distribution of assignments but also a ground of continuous communication, where teachers could deliver to the parents background on how they could help children learn at home. Lee et al. (2024) support the idea of this strategy and provide the results of a study indicating that parental involvement and effective communication are some of the most important success points in blended learning at the primary level, especially in settings in which students are dependent on their families and access technological and emotional support.

The other important aspect of the implementation process was the orientation towards developing a teacher capacity. School systems that have moved to blended learning forced teachers to attain novel competencies in the creation of digital material, interactive teaching, and varied instruction. The school met this need by internal training in tools like Canva, Google Forms, and simple video-editing software, informal peer mentoring and lesson design. This training aspect did not only improve the content of digital resources but also gave the teachers a chance to be more confident and creative when considering blended learning. In the context of blended learning, teacher preparedness is the key to success, and therefore it can be stated that the level of technology-based pedagogical change is truly dependent on teacher preparedness and not the shallow application of technology as a fad (Bizami et al., 2023).

These assessment techniques used in the blended learning model were also, flexible and embraced the best practice of student-based assessment. Teachers took an assessment that was the combination of descriptive assessments, creative portfolios and project presentations to give an account of the depth of learning processes of students. Such assessment forms made it possible to reward effort, creativity as well as the ability to solve problems beyond formal measures of academic excellent. It corresponds to the model introduced by Khosiyono et al. (2022), who encourage authentic assessments in blended learning that concentrates on acquiring competencies instead of the ability to memorize the contents. Besides, educators offered individual feedback in the form of verbal communication and online messages so students could be guided in the right direction and develop properly.

Teachers' and Students' Experiences on Blended Learning

The experiences of teachers and students in the process of blended learning implementation in Pasirian 01 Public Elementary School have vital insights into the potentials that the new educational model has in terms of its transformative capacity, as well as the intricacies and

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

challenges that it poses on the process of its implementation. These experiences elucidate the potential of properly implemented blended learning to produce richer, more engaging, and more inclusive learning experiences, but these experiences also highlight how a lack of resources and prevailing structures and pedagogies push educators to adjust in some circumstances in order to create equitable conditions in their classrooms.

Pasirian 01 teachers had to make important mindset and practice adjustments in their move to blended learning. Teachers reported that the two-fold nature of preparing both in-person and online material was deemed daunting initially. They had to plan two lesson versions: a delivery to the classroom and the other one optimised to be asynchronous and sent in a digital format. One Grade V teacher added that, “Initially I had problems since I had to prepare two different content of the lessons, and the children got more active and energetic since they felt that the learning situation was not repetitive as before.” This consideration highlights an essential straining point typically observed in blended learning studies the increased burdens of teachers in the switch-over period, as measured against the future harvests in student attention and interest (Hamad et al., 2024; Anthony Jnr, 2024).

Once the teachers were more confident and comfortable with digital resources, most of them started to enjoy the creative opportunities that the blended learning promised. They included videos of learning, interactive quiz, multimedia assignments, to motivate interest and involvement of students. Bizami et al. (2023) have the same ideas on the matter and believe that effective blended learning should not only involve teachers providing content via digital means, but creating a multimodal and interactive activity that is learner-centered. Pasirian 01 teachers noted that the following activities, which focused on introducing creative activities into the schools, founder the children to be enthusiastic students: poster-making, storytelling, and crafts activities. One of the Grade IV teachers said, I would combine learning videos with some drawing or craft activities. Usually passive children get excited to display their work. This witness statement is supported by the finding by Capron Puozzo & Audrin (2021) about the role of creative tasks in empowering a student to a certain degree of self-efficacy and sense of learning ownership when integrated into the authentic learning environment.

On the side of the students, blended learning brought in both possibilities and problems. Numerous students indicated that they were pleased by the adaptability and new character of the video and electronic assignments learning. One grade v student said, I could always repeat myself until I understand, when I can learn out of a video. To create a poster, it was amusing when I was commanded to develop one since I could employ own ideas.” These remarks underscore the fact that blended learning aids differentiated instruction and self-paced learning, which have been demonstrated in previous research to have a positive effect on establishing student motivation and promoting further learning (Lee et al., 2024; An et al., 2024). Students were enabled to overcome insecurity because they could learn at their own pace and use their creativity in doing tasks individually and in a manner that know they are good at.

These nice experiences were however dented by the present very real challenge of technological and infrastructural limitations. A large percentage of learners answered that they had trouble finding devices, that they were sharing a mobile phone with their siblings or parents, or that they had unreliable internet connectivity. A Grade IV student commented, There are times when I need to wait since my brother is using the cellphone, and when he is done then I would have time to watch the video. However, when I have an opportunity to learn by means of my cellphone, I get more enthusiastic.” These issues are quite commonly reported in the blended learning in developing literature where the digital divide may be an influential

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

factor disproportionally mediating the success and accessibility of technology-based education (Sareen & Mandal, 2024). Nevertheless, despite these obstacles the students were strong and motivated and this is a sign of the positive climate in the educational process and the school as a whole.

Another aspect of the blended learning experience at Pasirian 01 was changing teacher-student relationships. Learning in the dual modality preconditioned new relationships, as the teacher should provide their support not only in the real classroom but also online. The originally dry WhatsApp groups, which were used to exchange assignments, for logistical reasons, evolved into dynamic places, where encouragement, clarification, and feedback were given and received. Such communication process responds to the research results by Lee et al. (2024) that stable coffee versus blended learning interactions enhance the process of student engagement and lead to the feeling of being connected even in physically distant learning. The introduction of blended learning was also beneficial since according to teachers of Pasirian 01, students previously unwilling to express themselves in the classroom felt freer to communicate through such digital means and were reported to be more open with their voice.

However, teachers were not straining-free in the process. Numerous talked about the high learning curve linked to the use of new digital tools, creation of interactive content, and the balancing of the two requirements of physical and online teaching. These challenges were addressed through the internal training that the school conducted, allowing tutors to slowly enhance their master of using several platforms, such as Canva, Google Forms, and video editing software. This resembles the claim of Bizami et al. (2023) that professional development is a key factor that promotes the effective utilization of blended learning, especially, when graded professionals are unfamiliar with educational technologies. The fact that teachers embrace change and innovation at the expense of feeling awkward at first illustrates the critical importance of teacher agency in the field of changing education.

Lastly, teachers and students indicated the importance of creative and authentic assessment to be conducted to maintain motivation and reward various types of achievements. Project presentation, descriptive feedback, and portfolios enabled students to express their creativity and effort in a manner that could not otherwise have been measured by the standard assessment procedures. Such an attitude boils down to the suggestion of Khosiyono et al. (2022) to allow more humanizing and process-based assessment practices in blended learning settings, which do not solely focus on the finally produced product, but the learning process itself. Teachers stressed that these assessments also help them to be more aware of the individual situations of the students and their needs, to develop a more empathetic and responsive learning atmosphere.

Difficulties in using Blended Learning

Although their vision and implementation of the blended learning strategy at Pasirian 01 Public Elementary School are very admirable, in that the school clearly saw a need to adopt the blended learning system to enhance the quality of teaching and learning there, there were significant challenges, both of which shaped the practice and the outcome of the program. These difficulties were diverse in nature, representing structural, technological, pedagogical and socio-cultural aspects that are commonly under-analysed in uni-dimensional interpretations of education innovation. The way the school managed to recognize, maneuver, and attempt to solve these challenges can be of great interest to the general discussion on blended learning in primary education, especially those under-resourced ones.

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

There is one type of challenge that was perhaps the most prevalent; it was the unequal availability of not only digital devices but stable internet connections. The number of students who did not have personal smartphones, tablets, or laptops at Pasirian 01 was sizeable A laptop is a personal computer that may be utilized in several different ways. Secondly, there is a strong correlation between increased literacy in reading and writing and subsequent better learning and improvement of the literacy rate. Third, there is a very close relationship between high level of literacy in reading and writing and consequent improved learning and advancement of the literacy levelMost of them had to depend on borrowing devices by parents or siblings and most often had limited and irregular access to online learning resources. The lack of consistency or good internet services in some of the portions of the Pasirian subdistrict further widened this digital divide as students were not able to access and download materials, view videos, or hand in assignments respectively. The literature documents such technological barriers and Sareen and Mandal (2024) even state that infrastructure gaps are among the most relevant obstacles to the fair implementation of blended learning in the Global South. Yes, as one of the Grade IV students at Pasirian 01 put it poignantly "At times, I have to wait before my brother is done with the cellphone so that I can watch the video." However when I am able to learn through my cellphone, I tend to get excited more." What this shows is the paradoxical nature of blended learning in these settings, as it has the ability to democratize learning, and even create greater inequality when structural limitations are not dealt with proactively.

At the same time, the educational workers at Pasirian 01 struggled with the process of producing and presenting two-format educational resources. The pressure to create teaching material that could be used both in the face-to-face environment as well as asynchronously online drained on their time, talents, and emotional capacity. Other people found themselves in a challenge of learning how to use new digital tools quickly, like video-editing software or creation of interactive quizzes. This is in line with the results of Bizami et al. (2023) that believe that the effectiveness of blended learning depends not only on technology availability but also on the ability of teachers to use the technology successfully, and this ability has to be formed in many cases along with the changes to be introduced in the pedagogical design. The fact that teachers at the beginning were unfamiliar with creating amazing, interactive digital content to ensure that learning activities can keep students creatively and motivated in both modalities meant that this was difficult to achieve.

In addition, yet another important issue existed on the boundary between the school and home settings. By its definition, blended learning at the primary level would involve at least some form of parental interaction to allow young students to cope with the requirements of the process of navigating tasks on hand, keeping time and finding sources. The problem is that all parents in Pasirian 01, just as in most other similar settings, did not have the necessary digital literacy and time that would allow them to play these roles successfully. One Grade IV student told me, "Not all the parents can access the learning videos or open Google Form, which makes their children confused, as well." This fact tends to prove the criticality of another argument that Lee et al. (2024) report: in case the home learning environment is extremely supportive and parental support is also high with sufficient digital preparedness, the positive effects of blended learning can be enhanced, whereas, otherwise, the results might be completely undercut. The children, whose parents lacked knowledge about education technology or had to focus on economic needs, had even more obstacles on their way to coping with tasks and remaining engaged.

The process of assessment and provision of feedback also came with certain obstacles. Educators said it was hard to review the creativity and motivation of students comprehensively due to the shortcomings of remote engagement and irregularity of assignment submission. Our

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

work was done likewise through digital submissions, which cost some students a chance at recording their creative work and have their work reviewed as early as possible to receive their feedbacks or suggestions. Khosiyono et al. (2022) also remark that in blended learning, authentic assessment presupposes mechanisms appropriate to measure not only the process of student efforts but also the product, which is, in an environment where mirroring tight interaction with other students is not possible due to technological factors, a much more challenging task.

In spite of these great obstacles, Pasirian 01 showed flexibilities and commitment to equality with a variety of situational answers. They also understood that there were significant differences in digital access as the school adapted the frequency of face-to-face interactions, so that the students struggling in online learning had a better chance of direct teaching and guidance. This mixed balance provides a flexible model reflecting an idea that blended models should not be firm but adaptive ones to the context of learners as Can et al. (2024) emphasize. The school also made arrangements with regards to allowing teachers and some of the school committee members to give out old devices to students in need and informal partnerships were proposed to give out subsided internet data packages. Although these steps did not eliminate the possibility of digital divide completely, they alleviated the most severe outcomes and allowed more people to take part.

To overcome the difficulty in teacher readiness, the school launched in-house capacity-building discussions, such as training by peers on how to make simple educational videos, using Canva in design activities, and administering Google Forms as assessments. Not only did the technique develop technical abilities but also create a working culture of collaboration between the teachers, where they would help each other out in understanding the requirements of blended learning. This is consistent with the findings of Bizami et al. (2023) that insist on teacher collaboration and continuous teacher professional development as the indispensable precondition to the implementation of sustainable blended learning practices.

The attempts to enhance the school-home contact were also remarkable. Teachers have formed specific WhatsApp groups with parents and discuss weekly learning guides as well as very simple video lessons and technical advice that could enhance families in assisting their children in their learning process. Such active communication tactics align with the study by Lee et al. (2024) who remember the significance of training the parents as the co-facilitators of learning in the blended environments, especially at the primary school level. By doing so, Pasirian 01 aimed at establishing a more supportive ecosystem, which was not confined to the walls of the school because the city neighborhood practically makes up the success of blended learning as much as the classroom.

And lastly, the school became more tolerant and human with its methods of evaluation by becoming less firm with grading and making more descriptive and considerate remarks about the effort put in, the creativity, and the improvement on difficult situations. Teachers employed the use of portfolios, project presentations, and straightforward reflective activities of recording the richness of the learning process of the students. By doing so, they have adhered to the values provided by Khosiyono et al. (2022) that promote assessment types which acrylic the product and the process, as well as the one that supports various conditions students must live in.

Conclusion

The example of the installation of blended learning at Pasirian 01 Public Elementary School provides a quite appealing example of how an educational innovation can be rationally

ISSN 2721-0979 (Print), ISSN 2721-1258 (Online)

deployed to a rural resource-limited setting to maintain or enhance creativity and learning interest among elementary schoolchildren. A blend of in-person teaching, low-bandwidth online applications and off-line tasks allowed the school to build a more adaptive, interactive, and student-centred learning environment. Technology was not the only factor that led to this success but also the investment the school had in its responsiveness to context, capacity building of the teachers and collaboration with the families in the school. By that, Pasirian 01 enacts that blended learning, steered by comprehensively oriented pedagogy and adaptive leadership, has an incredible potential to democratize educational opportunities and foster a 21 st -century competencies even in the environments characterized by infrastructural and socio-economic limitations.

Most importantly, the following experience of the school reveals the real strength of blended learning is not by simply combining technology in the learning and teaching relationship. The changes in the way teachers teach (from traditional, teacher-centered approaches to the one that appreciates student voice and focuses on innovation and alternative ways to progress) were fundamental in the upward trends in student engagement and creativity. Educators ceased to be bearers of content but became guides leading investigations and expression, and learners abandoned the roles of mere consumers of knowledge to become participants of their own educational paths. The changes based on these shifts indicate prevalent global discussions about the future role that education must play in raising adaptive, creative, and resilient students ready to face the uncertainties of the future (Anthony Jnr, 2024; Nantha et al., 2024).

Nevertheless, the research identifies the obstacles that continue to exist and with which blended learning should be confronted to attain its full potential. The problem of the unfair distribution of access to devices and connection, insufficient digital literacy in the teacher or parent information, and the increased workload associated with the development of dual-modality instruction continue to be problems. Solutions such as augmenting face to face support, developing internal teacher clinical capacity, strengthen school-home connection etc. taken by Pasirian 01 is enough to give a clear picture of the multi-level strategies that are needed to keep these hurdles in check. These measures are however potent and indicate there is a necessity to have some form of larger systems support in places such as policy interventions, infrastructural investment, and long-term professional development opportunities.

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